



PATENTS  
CF-007R

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicants : Fraser et al.  
Application No. : 09/859,661 Conf. No. :3933  
Filed : May 17, 2001  
For Reissue of Patent No. : 5,905,974  
Issued : May 18, 1999  
For AUTOMATED AUCTION PROTOCOL PROCESSOR  
Group Art Unit : 3622  
Examiner : James W. Mhyre

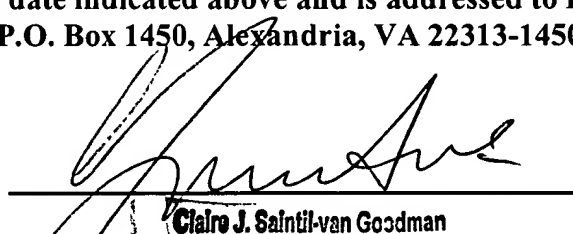
New York, New York 10020  
October 25, 2004

Hon. Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

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Claire J. Saintil-van Goodman

**Encl:**

- Appeal Brief Under 37 C.F.R. § 41.37;
- Appendices A - G;
- Authorization to Charge Deposit Account;
- Check for \$2,420.00 (Appeal Brief & 5 Month Extension Fee);
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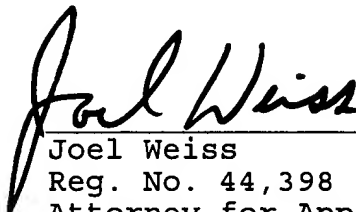
AUTHORIZATION TO CHARGE DEPOSIT ACCOUNT

Sir:

The Director is hereby authorized to charge any additional fee due, or credit any overpayment, in connection with the accompanying Appeal Brief Under 37 C.F.R. § 1.192, to Deposit Account No. 06-1075. A duplicate copy of this

Authorization is submitted herewith.

Respectfully submitted,

A handwritten signature in cursive script, reading "Joel Weiss". The signature is written in black ink and is positioned above a horizontal line that separates it from the printed text below.

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PATENTS  
CF-007R

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

REISSUE PATENT APPLICATION

Reissue : Stuart A. Fraser et al.  
Applicants/Appellants  
  
Application No. : 09/859,661 Confirmation No. 3933  
  
Filed : May 17, 2001  
  
For Reissue of : 5,905,974  
Patent No.  
  
Issued : May 18, 1999  
  
For : AUTOMATED AUCTION PROTOCOL PROCESSOR  
  
Examiner : James W. Mhyre  
  
Group Art Unit : 3622

New York, New York 10020  
October 25, 2004

Hon. Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Sir:

Pursuant to 37 C.F.R. § 41.37, applicants/appellants file this Appeal Brief in support of the March 25, 2004 Notice of Appeal from the Examiner's final Office Action of October 3, 2003 rejecting claims 1-5, 7-23 and 31-37 pending in this application.

10/27/2004 EAREGAY1 00000147 09859661

01 FC:1402 340.00 OP  
02 FC:1255 2080.00 OP



Pursuant to 37 C.F.R. § 1.17(c), applicants/appellants enclose herewith a check in the amount of \$2,420.00 in payment of the filing fee for this Appeal Brief with a five-month extension. The Director is authorized to charge any additional fees that may be due, or to credit any overpayment, in connection with the filing of this Appeal Brief, to Deposit Account No. 06-1075. A separate Authorization to Charge Deposit Account is enclosed for this purpose (in duplicate).

In view of the arguments and authorities set forth below, this Board should find the rejection of claims 1-5, 7-23 and 31-37 of this application to be in error and should reverse it. Claims 1-5, 7-23 and 31-37 are patentable.

This Brief has the following appendices:

- Appendix A: Copy of claims 1-5, 7-23 and 31-37 involved in this Appeal;
- Appendix B: Copy of October 3, 2003 final Office Action;
- Appendix C: Copy of U.S. Patent No. 5,038,284;
- Appendix D: Copy of U.S. Patent No.; 5,243,331;
- Appendix E: Copy of "Design of an Internet-based System for remote Dutch auctions," Internet Research: Electronic Networking Applications and Policy, Vol. 5, No. 4, 1995, pp. 10-16; and
- Appendix F: Definition of "Intended"
- Appendix G: Related Proceedings Appendix including  
1) a Memorandum Order dated January 14, 2004 (concerning a motion for Preliminary Injunction) and  
2) a Opinion and Order dated September 9,

2004 (concerning the *Markman* hearing for the above-identified litigation)

all issued by Judge K. Jordan in the U.S. District Court for the District of Delaware in the *eSpeed* litigation. in *eSpeed, Inc. et al. v. BrokerTec USA, L.L.C. et al.*, D. Del., Civil Action No. 03-612 (KAJ).

I. IDENTIFICATION OF REAL PARTY-IN-INTEREST

Pursuant to 37 C.F.R. § 41.37(c)(i), applicants/appellants respectfully advise the Board that the real parties-in-interest in the above-identified patent application are Cantor Fitzgerald, L.P., and CFPH, L.L.C., a limited partnership and a limited liability company, respectively, organized and existing under the laws of the State of Delaware, and having an office and place of business at 135 E. 57th Street, 5th Floor, New York, New York 10022, which are the assignees of this application.

II. RELATED APPEALS AND INTERFERENCES

Pursuant to 37 C.F.R. § 41.37(c)(ii), applicants/appellants respectfully advise the Board that there are no other appeals or interferences known to them, their legal representative, or their assignees, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Applicants/appellants brought the litigation styled *eSpeed, Inc. et al. v. BrokerTec USA, L.L.C. et al.*, D. Del., Civil Action No. 03-612 (KAJ) (hereinafter "the *eSpeed* litigation") to the attention of the Examiner in an Information Disclosure Statement filed October 2, 2003. The

eSpeed litigation involves U.S. Patent No. 6,560,580, which claims priority from the above-captioned patent in reissue under 35 USC 119. Copies of a Memorandum Order dated January 14, 2004 (concerning a motion for Preliminary Injunction) and a Opinion and Order dated September 9, 2004 (concerning the *Markman* hearing for the above-identified litigation) are attached at Appendix F.

III. STATUS OF CLAIMS

Claims 1-5, 7-23 and 31-37 are pending in this application. Each of claims 1-5, 7-23 and 31-37 has been rejected and is on appeal.

IV. STATUS OF AMENDMENTS

Applicants/appellants have not submitted any amendment pursuant to 37 C.F.R. § 1.116 or in reply to the Examiner's October 3, 2003 final Office Action, from which this Appeal is being sought.

V. SUMMARY OF CLAIMED SUBJECT MATTER

One embodiment of the invention, as claimed in claim 1, relates to a data processing system for implementing a structured trading environment for transacting the purchase and sale of select items having a predetermined set of characteristics. The data processing system is operated by a plurality of trading participants through a communication platform to permit exchanging offers and bids and for receiving select participant trade commands relating to the items.

The data processing system includes a plurality of workstations comprising a display means for presenting to a participant information about pending market conditions as they relate to the items being traded and bids and offers

entered by other participants in regard to the items. The data processing system also includes a server, in communication with the workstations, programmed to support a predetermined trading control logic. The trading control logic comprises a protocol of trade sequences initiated from a bid/offer state by a participant hit or lift trade command. The protocol is directed to execute trade commands from the participants in a predefined way corresponding to a plurality of trade states defining the ability of various participants to participate in trading activity.

In this embodiment of the invention, the trade states include a state whereby the trading control logic, in response to detecting that an aggressor participant's hit or lift trade command would execute a trade in excess of what the aggressor participant may have intended, automatically enables the aggressor participant to decline, prior to execution, at least a portion of only the excess part of the trade.

Support in the specification for claim 1 is found at least in the locations indicated in the following table:

Claim 1	The Specification
<p>In combination in a data processing system for implementing a structured trading environment for transacting the purchase and sale of select items having a predetermined set of characteristics wherein said data processing system is operated by a plurality of trading participants through a communication platform to permit exchanging offers and bids and for receiving select participant trade commands relating to said items, comprising:</p>	<p>See, e.g., "A data processing system for implementing transaction management of auction-based trading for specialized items such as fixed income instruments" abstract. See, e.g., "The above and other objects of the present invention are realized in a specifically delineated computer-based, data processing system having a governing program controlled logic for orchestrated management of select trading functionality. The data processing employs a plurality of trading workstations linked with a server for coordinated data flow and processing.</p>
	<p>Communication is provided by per se available network, via Ethernet, token ring, token bus, or other hierarchical LAN and/or WAN configuration" (column 4, line 54-62). See also, e.g., FIG. 1.</p>

Claim 1	The Specification
<p>a plurality of workstations comprising a display means for presenting to a participant information about pending market conditions as they relate to said items being traded and bids and offers entered by other participants in regard to said items; and</p>	<p>See, e.g., "This hardware arrangement encompasses a plurality of custom designed workstations linked together for communication. Each workstation is linked to a central server that orchestrates the trading processes in accordance with program controlled logic. The workstation includes a display for presentation of the particulars of trading activity" (column 5, line 60-66). See also, e.g., FIG. 1, elements 10.</p>
<p>a server, in communication with said workstations, programmed to support a predetermined trading control logic wherein said trading control logic comprises a protocol of trade sequences initiated from a bid/offer state by a participant hit or lift trade command wherein said protocol is directed to execute trade commands from said participants in a predefined way corresponding to a plurality of trade states defining the ability of various participants to participate in trading activity</p>	<p>See, e.g., "The data processing employs a plurality of trading workstations linked with a server for coordinated data flow and processing" (column 4, lines 58-60). See, e.g., "The workstation 'state' will determine the options available to that trader--and thus enables controlling the flow of trades in a cost-efficient and error-free manner" column 5, lines 22-24. See, e.g., "Each workstation is linked to a central server that orchestrates the trading processes in accordance with program controlled logic" (column 5, lines 62-65).</p>

Claim 1	The Specification
	<p>See also, e.g., "The interrelationship of these five system 'states' is depicted in FIG. 4. Initial trading is always predicated on the Bid/Offer State, with the sequence process, assessing system inputs for a change of current state. As inputs are entered, a state change is triggered and processing shifts to the paradigms associated with (i) When, (ii) Workup, (iii) Workdown, and (iv) Second Look. As each state is entered, the protocols are shifted and new rules to trading apply" column 8, lines 53-60. See, e.g., "When a trade is in progress--as</p>
	<p>initiated by a hit or lift from the Bid/Offer State" (column 9, lines 14-16). See also, e.g., FIG. 1, element 20, and FIG. 4.</p>

Claim 1	The Specification
<p>wherein said trade states include a state whereby the trading control logic, in response to detecting that an aggressor participant's hit or lift trade command would execute a trade in excess of what the aggressor participant may have intended, automatically enables the aggressor participant to decline, prior to execution, at least a portion of only the excess part of the trade.</p>	<p>See e.g., "As can be appreciated, various customer moves in the market are often fast paced - and on occasion position changes may occur almost simultaneously. An example of this may be a first customer hitting a second customer's bid of a certain size, via the buy/sell all key - an instant after a second customer has significantly increased the bid size - say from 5 to 20 million. In this situation, the Aggressor, within the system, has now taken much more than he planned. This situation can be very disturbing in a rapidly shifting market.</p>
	<p>"System logic addresses this problem by creating a supplemental state known as the "Second Look" State. If during processing, the passive side size is increased just prior to a hit or lift command, the system discriminates the very recent offer/bid from the earlier entries, via an "age" timer, i.e., a system interval that tracks the pendency of all bids and offers and creates a Second Look State whenever a hit/lift (via buy/sell <u>all</u> key) occurs while a Bid/Offer is under, e.g., two seconds old.</p>



Claim 1	The Specification
	<p>"The Second Look, however, is limited. The Aggressor must complete the transaction excluding the new, i.e., 'unaged' Bid/Offer. The new size is left uncleared and others may add more offers/bids on this, the passive side--but these stay below the line. Even though the Aggressor did not fill the entire size displayed, the Aggressor assumes current worker status and has the right to:</p> <p>"1. Take the new size, creating the Workup State with the contra-traders;</p>
	<p>"2. Refuse the new size; the Aggressor refusal (via 'done' command) sets the trade into the Workdown State; and</p> <p>"3. Take/hit a 'partial' amount and then lose priority" (column 14, line 12-43). See also, e.g., FIG. 9, elements 1020, 1030, 1040, 1050, and 1060</p>

In another embodiment of the invention, as claimed in claim 31, at least one of the states enables first and second participants to trade a desired volume of an item with one another at a defined price, to the exclusion of a third participant desiring to participate in the trading, until the occurrence of a predefined event and, upon the occurrence of the event, enables the third participant to trade with the

first or second participants an additional volume of the item at the price without being able to exclude others from also participating in trading at the defined price.

Support in the specification for claim 31 is found at least in the locations indicated in the following table:

Claim 31	The Present Specification
In combination in a data processing system for implementing a structured trading environment for transacting the purchase and sale of select items having a predetermined set of characteristics wherein said data processing system is operated by a plurality of trading participants through a communication platform to permit exchanging offers and bids and for receiving select participant trade commands relating to said items, comprising:	<p>See, e.g., "A data processing system for implementing transaction management of auction-based trading for specialized items such as fixed income instruments" abstract. See, e.g., "The above and other objects of the present invention are realized in a specifically delineated computer-based, data processing system having a governing program controlled logic for orchestrated management of select trading functionality. The data processing employs a plurality of trading workstations linked with a server for coordinated data flow and processing.</p> <p>Communication is provided by per se available network, via Ethernet, token ring, token bus, or other hierarchical LAN and/or WAN configuration" (column 4, line 54-62). See also, e.g., FIG. 1.</p>

Claim 31	The Present Specification
<p>a plurality of workstations comprising a display means for presenting to a participant information about pending market conditions as they relate to said items being traded and bids and offers entered by other participants in regard to said items; and</p>	<p>See, e.g., "This hardware arrangement encompasses a plurality of custom designed workstations linked together for communication. Each workstation is linked to a central server that orchestrates the trading processes in accordance with program controlled logic. The workstation includes a display for presentation of the particulars of trading activity" (column 5, line 60-66). See also, e.g., FIG. 1, elements 10.</p>
<p>a server, in communication with said workstations, programmed to support a predetermined trading control logic wherein said trading control logic comprises a protocol of trade sequences initiated from a bid/offer state by a participant hit or lift trade command wherein said protocol is directed to execute trade commands from said participants in a predefined way corresponding to a plurality of trade states defining the ability of various participants to participate in trading activity, wherein:</p>	<p>See, e.g., "The data processing employs a plurality of trading workstations linked with a server for coordinated data flow and processing" (column 4, lines 58-60). See, e.g., "The workstation 'state' will determine the options available to that trader--and thus enables controlling the flow of trades in a cost-efficient and error-free manner" (column 5, lines 22-24). See, e.g., "Each workstation is linked to a central server that orchestrates the trading processes in accordance with program controlled logic" (column 5, lines 62-65).</p>

Claim 31	The Present Specification
	<p>See, e.g., "The interrelationship of these five system 'states' is depicted in FIG. 4. Initial trading is always predicated on the Bid/Offer State, with the sequence process, assessing system inputs for a change of current state. As inputs are entered, a state change is triggered and processing shifts to the paradigms associated with (i) When, (ii) Workup, (iii) Workdown, and (iv) Second Look. As each state is entered, the protocols are shifted and new rules to trading apply" (column 8, lines 53-60). See, e.g., "When a trade is in progress-- as initiated by a hit or lift from the Bid/Offer State" (column 9, lines 14-16). See also, e.g., FIG. 1, element 20, and FIG. 4.</p>

Claim 31	The Present Specification
<p>at least one of said states enables first and second participants to trade a desired volume of an item with one another at a defined price, to the exclusion of a third participant desiring to participate in the trading, until the occurrence of a predefined event and, upon the occurrence of said event, enables the third participant to trade with said first or second participants an additional volume of the item at said price without being able to exclude others from also participating in trading at the defined price.</p>	<p>See, e.g., "once established, the Workup State gives exclusive rights to the trade to the initial trader--who the system recognizes as the current worker. On screen, current workers are highlighted in a defined manner known to other participants. Current workers control the trade and can submit additional transaction volume to their contra-traders; this to the exclusion of outside customers" (column 12, lines 36-42). See also, e.g., QUAD 4D at column 13 line 59-column 14, line 10.</p>

In another embodiment of the invention, as claimed in claim 32, at least one of the states is a workup state in which (a) first and second participants are enabled, until the occurrence of a predefined event, to trade a desired volume of an item with one another at a defined price to the exclusion of a third participant who enters a trade command to trade an additional volume at the price and, (b) upon the occurrence of the event, the entered trade command of the third participant is automatically executed without enabling the third participant to exclude others from participating in trading more volume at the price.

Support in the specification for claim 32 is found at least in the locations indicated in the following table:

Claim 32	The Present Specification
<p>In combination in a data processing system for implementing a structured trading environment for transacting the purchase and sale of select items having a predetermined set of characteristics wherein said data processing system is operated by a plurality of trading participants through a communication platform to permit exchanging offers and bids and for receiving select participant trade commands relating to said items, comprising:</p>	<p>See, e.g., "A data processing system for implementing transaction management of auction-based trading for specialized items such as fixed income instruments" abstract. See, e.g., "The above and other objects of the present invention are realized in a specifically delineated computer-based, data processing system having a governing program controlled logic for orchestrated management of select trading functionality. The data processing employs a plurality of trading workstations linked with a server for coordinated data flow and processing. Communication is provided by per se available network, via Ethernet, token ring, token bus, or other hierarchical LAN and/or WAN configuration" (column 4, line 54-62). See also, e.g., FIG. 1.</p>

Claim 32	The Present Specification
<p>a plurality of workstations comprising a display means for presenting to a participant information about pending market conditions as they relate to said items being traded and bids and offers entered by other participants in regard to said items; and</p>	<p>See, e.g., "This hardware arrangement encompasses a plurality of custom designed workstations linked together for communication. Each workstation is linked to a central server that orchestrates the trading processes in accordance with program controlled logic. The workstation includes a display for presentation of the particulars of trading activity" (column 5, line 60-66). See also, e.g., FIG. 1, elements 10.</p>
<p>a server, in communication with said workstations, programmed to support a predetermined trading control logic wherein said trading control logic comprises a protocol of trade sequences initiated from a bid/offer state by a participant hit or lift trade command wherein said protocol is directed to implement trade commands from said participants in a predefined way corresponding to the development of a plurality of trade specific states defining the ability of various participants to participate in said trading activity, wherein:</p>	<p>See, e.g., "The data processing employs a plurality of trading workstations linked with a server for coordinated data flow and processing" (column 4, lines 58-60). See, e.g., "The workstation 'state' will determine the options available to that trader--and thus enables controlling the flow of trades in a cost-efficient and error-free manner" (column 5, lines 22-24). See, e.g., "Each workstation is linked to a central server that orchestrates the trading processes in accordance with program controlled logic" (column 5, lines 62-65).</p>

Claim 32	The Present Specification
	<p>See, e.g., "The interrelationship of these five system 'states' is depicted in FIG. 4. Initial trading is always predicated on the Bid/Offer State, with the sequence process, assessing system inputs for a change of current state. As inputs are entered, a state change is triggered and processing shifts to the paradigms associated with (i) When, (ii) Workup, (iii) Workdown, and (iv) Second Look. As each state is entered, the protocols are shifted and new rules to trading apply" (column 8, lines 53-60). See also, e.g., "When a trade is in progress-- as initiated by a hit or lift from the Bid/Offer State" (column 9, lines 14-16). See also, e.g., FIG. 1, element 20, and FIG. 4.</p>



Claim 32	The Present Specification
<p>at least one of said states is a workup state in which (a) first and second participants are enabled, until the occurrence of a predefined event, to trade a desired volume of an item with one another at a defined price to the exclusion of a third participant who enters a trade command to trade an additional volume at said price and, (b) upon the occurrence of said event, the entered trade command of the third participant is automatically executed without enabling the third participant to exclude others from participating in trading more volume at said price.</p>	<p>See, e.g., "once established, the Workup State gives exclusive rights to the trade to the initial trader--who the system recognizes as the current worker. On screen, current workers are highlighted in a defined manner known to other participants. Current workers control the trade and can submit additional transaction volume to their contra-traders; this to the exclusion of outside customers" (column 12, lines 36-42). See also, e.g., QUAD 4D at column 13 line 59-column 14, line 10.</p>

In another embodiment of the invention, as claimed in claim 33, at least one of the states enables a participant, in response to entry by the participant of a hit or lift trade command within a predetermined period of time following entry by another participant of a bid or offer command with respect to an item, to refuse or proceed with trading the item.

Support in the specification for claim 33 is found at least in the locations indicated in the following table:

Claim 33	The Present Specification
<p>In combination in a data processing system for implementing a structured trading environment for transacting the purchase and sale of select items having a predetermined set of characteristics wherein said data processing system is operated by a plurality of trading participants through a communication platform to permit exchanging offers and bids and for receiving select participant trade commands relating to said items, comprising:</p>	<p>See, e.g., "A data processing system for implementing transaction management of auction-based trading for specialized items such as fixed income instruments" abstract. See, e.g., "The above and other objects of the present invention are realized in a specifically delineated computer-based, data processing system having a governing program controlled logic for orchestrated management of select trading functionality. The data processing employs a plurality of trading workstations linked with a server for coordinated data flow and processing. Communication is provided by per se available network, via Ethernet, token ring, token bus, or other hierarchical LAN and/or WAN configuration" (column 4, line 54-62). See also, e.g., FIG. 1.</p>

Claim 33	The Present Specification
<p>a plurality of workstations comprising a display means for presenting to a participant information about pending market conditions as they relate to said items being traded and bids and offers entered by other participants in regard to said items; and</p>	<p>See, e.g., "This hardware arrangement encompasses a plurality of custom designed workstations linked together for communication. Each workstation is linked to a central server that orchestrates the trading processes in accordance with program controlled logic. The workstation includes a display for presentation of the particulars of trading activity" (column 5, line 60-66). See also, e.g, FIG. 1, items 10.</p>
<p>a server, in communication with said workstations, programmed to support a predetermined trading control logic wherein said trading control logic comprises a protocol of trade sequences initiated from a bid/offer state by a participant hit or lift trade command wherein said protocol is directed to implement trade commands from said participants in a predefined way corresponding to the development of a plurality of trade specific states defining the ability of various participants to participate in said trading activity, wherein</p>	<p>See, e.g., "The data processing employs a plurality of trading workstations linked with a server for coordinated data flow and processing" (column 4, lines 58-60). See, e.g., "The workstation 'state' will determine the options available to that trader--and thus enables controlling the flow of trades in a cost-efficient and error-free manner" (column 5, lines 22-24). See, e.g., "Each workstation is linked to a central server that orchestrates the trading processes in accordance with program controlled logic" (column 5, lines 62-65).</p>

Claim 33	The Present Specification
	<p>See, e.g., "The interrelationship of these five system 'states' is depicted in FIG. 4. Initial trading is always predicated on the Bid/Offer State, with the sequence process, assessing system inputs for a change of current state. As inputs are entered, a state change is triggered and processing shifts to the paradigms associated with (i) When, (ii) Workup, (iii) Workdown, and (iv) Second Look. As each state is entered, the protocols are shifted and new rules to trading apply" (column 8, lines 53-60). See, e.g., "When a trade is in progress-- as initiated by a hit or lift from the Bid/Offer State" (column 9, lines 14-16). See also, e.g., FIG. 1, item 20, and FIG. 4.</p>
<p>at least one of said states enables a participant, in response to entry by said participant of a hit or lift trade command within a predetermined period of time following entry by another participant of a bid or offer command with respect to an item, to refuse or proceed with trading the item.</p>	<p>See e.g., "If during processing, the passive side size is increased just prior to a hit or lift command, the system discriminates the very recent offer/bid from the earlier entries, via an "age" timer, i.e., a system interval that tracks the pendency of all bids and offers and creates a Second Look State whenever a hit/lift (via buy/sell all key) occurs while a Bid/Offer is under, e.g., two seconds old.</p>

Claim 33	The Present Specification
	<p>"The Second Look, however, is limited. The Aggressor must complete the transaction excluding the new, i.e., 'unaged' Bid/Offer. The new size is left uncleared and others may add more offers/bids on this, the passive side--but these stay below the line. Even though the Aggressor did not fill the entire size displayed, the Aggressor assumes current worker status and has the right to:</p> <p>"1. Take the new size, creating the Workup State with the contra-traders;</p> <p>"2. Refuse the new size; the Aggressor refusal (via 'done' command) sets the trade into the Workdown State; and</p> <p>"3. Take/hit a 'partial' amount and then lose priority" (column 14, line 11-43). See also, e.g., FIG. 9, elements 1020, 1030, 1040, 1050, and 1060.</p>

In another embodiment of the invention, as claimed in claim 16, a computer trading system for use by multiple participants, wherein at least two of the participants each operates a custom designed keypad for data entry and receives information about market conditions from a display, is provided. The system includes a data processor with associated data storage for providing a trading protocol that

establishes trading hierarchy among participants. The keypad includes a plurality of trade execute keys. The keys are programmed to be individually assigned to a particular security available for trading. The display presents to the participants price and size information for pending offers and bids for at least one of the particular securities available for trading.

Support in the specification for claim 16 is found at least in the locations indicated in the following table:

Claim 16	The Present Specification
A computer trading system for use by multiple participants, wherein at least two of the participants each operates a custom designed keypad for data entry and receives information about market conditions from a display, the system comprising:	See, e.g., "A customized keypad permits enhanced data/position entry by the broker" (column 5, lines 66-67). See also, e.g., FIGS. 3A-3C.
a data processor with associated data storage for providing a trading protocol that establishes trading hierarchy among participants;	See, e.g., "First, in brief overview, the present invention is directed to a data processing system for implementing complex trading rules in support of select transactions. The first aspect of the invention relates to a particular hardware arrangement that provides a specifically tailored platform for processor enhanced and supported trading.

Claim 16	The Present Specification
	<p>This hardware arrangement encompasses a plurality of custom designed workstations linked together for communication. Each workstation is linked to a central server that orchestrates the trading processes in accordance with program controlled logic. The workstation includes a display for presentation of the particulars of trading activity. A customized keypad permits enhanced data/position entry by the broker.</p>
	<p>"The second aspect of the invention is the governing logic for controlling system dynamics. This logic is stored in system memory and provides the sequence of protocols and rules that allocate trading priority, and the system responses to operative commands entered by the brokers at the workstations" (column 5, line 55-column 6, line 6).</p>

Claim 16	The Present Specification
<p>wherein said keypad includes a plurality of trade execute keys, said keys programmed to be individually assigned to a particular security available for trading; and</p>	<p>See, e.g., FIG. 3A-3C, two or more of the elements entitled BUY BOND BASIS, BUY TRIPLE OLD BOND, BUY OLD BOND, BUY BOND, SELL BOND BASIS, SELL TRIPLE OLD BOND, SELL OLD BOND, and SELL BOND. See also, e.g., in FIG. 3B, "KEYS IN THIS COLUMN EXECUTE "BUY" COMMANDS FOR FOUR DIFFERENT ISSUES (PREPROGRAMMED) and in FIG. 3C, "KEYS IN THIS COLUMN EXECUTE "SELL" COMMANDS FOR FOUR DIFFERENT ISSUES (PREPROGRAMMED).</p>
<p>said display presents to the participants price and size information for pending offers and bids for at least one of the particular securities available for trading.</p>	<p>See, e.g., "These various positions are displayed on the computer terminal in specific ways to reflect priority, etc. A customer can establish trading priority by placing a bid or offer at a select price and volume; bids at the same price are displayed on the screen in time order in which they enter the system (as are offers). As such a 'queue' of bids and offers develops, with place in line set by time at the same price. This queue is displayed on screen at the broker's workstation" (column 6, lines 49-57).</p>

VI.       GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL      

The following issues are presented for review on appeal:



1. Is the Examiner's rejection of claims 1-5, 7-15 and 34-36, based on the first paragraph of 35 U.S.C. § 112, erroneous?
2. Is the Examiner's rejection of claims 1-5, 7-18, 20-23 and 34, as being separately anticipated by the McCausland reference and the Kramer reference, erroneous?
3. Is the Examiner's rejection of claim 19, as anticipated by the McCausland reference, erroneous?
4. Is the Examiner's rejection of claims 31-33 and 35-37 under 35 U.S.C. § 103(a), as being unpatentable over the McCausland, Kramer and the Dutch auction references, erroneous?
5. Is the Examiner's rejection of claim 19 under 35 U.S.C. § 103(a), as being unpatentable over the McCausland and Kramer references, erroneous?

VII. ARGUMENT

- A. The Rejection Of Claims 1-5, 7-15  
and 34-36 Under 35  
U.S.C. § 112 Is Improper

The Examiner rejected claims 1-5, 7-15 and 34-36 under 35 U.S.C. § 112 for failure to describe subject matter in the specification in such a way to enable one skilled in the art to make and/or use the invention (Final Office Action pp. 2-3). Claim 1 is independent. Each of claims 2-5, 7-15, and 34-36 is dependent, directly or indirectly, from claim 1.

This written description rejection fails because the Examiner has based the rejection on subject matter that is not claimed. The specification does, in fact, provide a description of what is actually claimed in claim 1. Thus, the

Examiner erred in rejecting these claims under 35 U.S.C.  
§ 112.

Claim 1 claims "a state whereby the trading control logic, in response to detecting that an aggressor participant's hit or lift trade command would execute a trade in excess of what the aggressor participant may have intended, automatically enables the aggressor participant to decline, prior to execution, at least a portion of only the excess part of the trade" (emphasis added). The specification describes a preferred embodiment for providing this functionality at column 14, lines 12-37 (emphasis added):

As can be appreciated, various customer moves in the market are often fast paced - and on occasion position changes may occur almost simultaneously. An example of this may be a first customer hitting a second customer's bid of a certain size, via the buy/sell all key - an instant after a second customer has significantly increased the bid size - say from 5 to 20 million. In this situation, the Aggressor, within the system, has now taken much more than he planned. This situation can be very disturbing in a rapidly shifting market.

System logic addresses this problem by creating a supplemental state known as the "Second Look" State. If during processing, the passive side size is increased just prior to a hit or lift command, the system discriminates the very recent offer/bid from the earlier entries, via an "age" timer, i.e., a system interval that tracks the pendency of all bids and offers and creates a Second Look State whenever a hit/lift (via buy/sell all key) occurs while a Bid/Offer is under, e.g., two seconds old.

The Second Look, however, is limited. The Aggressor must complete the transaction excluding the new, i.e., "unaged" Bid/Offer . . .

Thus, written description is provided in the specification for what is claimed. The specification clearly describes a non-limiting embodiment which detects that a participant may have taken more than he or she "planned" or "intended" (as claimed).<sup>1</sup>

The Examiner erroneously rejected these claims. The Examiner stated that "the specification does not enable one of ordinary skill in the art at the time the invention was made to determine how the invention would be able to determine what *the aggressor participant may have intended*" (Final Office Action p. 3; emphasis original). This rejection is incorrect. As shown above, the specification supports the claim where the specification teaches a "Second Look" state of the preferred embodiment which functions to detect that a participant may have "taken much more than he planned" (emphasis added).

The Examiner has erroneously added limitations into the claim that are not there because none of the claims require - as stated in the Examiner's rejection - that the invention determine "what" the aggressor participant intended to purchase. Rather, as the claim recites and the specification describes, claim 1 simply is concerned with

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<sup>1</sup> The word "intended" means and is a synonym for "planned." According to The American Heritage College Dictionary, 3<sup>rd</sup>. Ed. 1997: "in-tend (in tend'), v. . . tr. 1. to have in mind; plan: *We intend to go.* . . . "

According to The New Roget's Thesaurus, Library Edition, Updated 1978:  
"Verbs. Plan  
". . . ;aim, intend, purpose, propose.

See Appendix G.

detecting circumstances in which an aggressor participant's trade command would execute a trade in excess of what the aggressor participant may have intended. For example, suppose an aggressor participant sees a quantity of 100 of an item being bid (or offered) by other participants, and the aggressor decides to buy (or sell) all of that quantity. The aggressor would enter a buy (or sell) all command. Unknown to the aggressor, however, a short time (e.g., a few seconds) before the aggressor's trade command was entered someone else entered a bid (or offer) that increased the size of the opposite side of the market by another 100 in quantity. Thus, the aggressor - thinking he or she was about to trade 100 of the item - now finds that 200 were traded. Under these circumstances, which typically may occur in a fast-paced market where orders are changeable and placed very quickly, the participant may not have intended to execute a trade for the quantity shown by the system at the instant that the participant entered his command. To protect participants from executing trades that are potentially in excess of what they may have planned or intended, claim 1 provides a trade state that automatically enables the aggressor participant to decline a portion of the increase in size that the system has detected "may" have been more than was intended. In the case of the disclosed embodiment, the detection of what the aggressor "may" have intended is based on a timing parameter, namely, detecting that a trade command was entered just prior to a bid or offered size having increased.

Thus, the Examiner's rejection fails because the claimed invention makes no determination of "what" the aggressor actually intended. Rather, the invention detects

that circumstances exist under which a trade may be executed in excess of what the aggressor may have intended, and provides a safeguard to protect the aggressor from executing a trade different from what he or she may have intended. Written description of an example of what is claimed is disclosed in the portion of the specification quoted above (column 14, lines 12-37). Accordingly, the rejection under 35 U.S.C. § 112 of claim 1 (and associated dependent claims 2-5, 7-15, and 34-36) fails.

B.    The Rejection Of Claims 1-5, 7-18, 20-23 and 34 Under 35 U.S.C. § 102 Is Improper

The Examiner rejected claims 1-5, 7-18, 20-23 and 34 under 35 U.S.C. § 102(b) as being separately anticipated by the McCausland reference and the Kramer reference (Final Office Action pp. 3-8). These claims included independent claim 1 (and claims 2-5, 7-15 and 34, which depend directly or indirectly from claim 1) and independent claim 16 (and claims 17-18 and 20-23, which depend directly or indirectly from claim 16). As explained below, neither claim 1 nor claim 16 (and, hence, none of their respective dependent claims) is anticipated by the McCausland reference or by the Kramer reference. Thus, the Examiner erred in rejecting these claims.

1.    Claims 1-5, 7-15 and 34

Independent claim 1 is not anticipated by McCausland or by Kramer for at least the reasons discussed below. Thus, none of dependent claims 2-5, 7-15 and 34 is anticipated.

The Examiner argues that McCausland and Kramer disclose the claimed "central server" of claim 1 because each reference allegedly discloses a "server programmed to conduct trading sequences responsive to trade commands received from the workstation users" (Final Office Action p. 4). This, however, is not what claim 1 recites. Claim 1 says that the central server is:

"programmed to support a predetermined trading control logic wherein said trading control logic comprises a protocol of trade sequences ... wherein said protocol is directed to execute trade commands from said participants in a predefined way corresponding to a plurality of trade states defining the ability of various participants to participate in trading activity" (emphasis added).

The specification discloses at least five non-limiting examples of trade states that differently define the ability of various participants to trade: the Bid/Offer State, the Workup State, the Workdown State, the When State and the Second Look State.

McCausland and Kramer do not disclose a plurality of trade states. Indeed, the Examiner concedes that neither reference even uses the terminology "trade state" (Final Office Action p. 4). The figure and passage in McCausland cited by the Examiner (Figure 1; column 22, lines 43-63; and column 24, lines 7-63) describe that a participant may participate in trading by highlighting an issue, and then pressing a HIT or TAKE key to initiate a trade of that issue. Even if the Examiner had asserted this to be a trade state, nothing else is disclosed by McCausland that differently defines how a trader may participate in trading. None of the other McCausland passages cited by the Examiner on page 4 of

the Final Office Action (column 10, lines 30-51; column 11, lines 64-68 or column 23, lines 1-5) discloses a plurality of trade states as recited by the claim.

The system described in Kramer is not even a trading system and, for this reason alone, does not disclose the claimed plurality of trade states. Kramer is instead directed to a system for processing data that is entered by traders concerning transactions that traders have made outside of the system. The system includes a plurality of portable transaction stations for converting manually entered data into signals and transmitting those signals, and for receiving signals and converting the received signals for display. The system reconciles and reports errors of trades entered by traders and contra-traders, reports quotes and transactions based on bid, ask, buy, sell and other information entered into the portable terminals, time stamps transactions, negates and voids transactions, etc. (See, e.g., Kramer column 1, lines 8-14; column 3, line 34 through column 7, line 22; column 10, line 33 through column 11, line 30; and column 12, lines 3-12.)

There is no disclosure of using the Kramer data processing system as a trading system that executes trades. The Examiner's argument - that Kramer's keys that light up to indicate which keys are appropriate answers to menu questions is a disclosure of the claimed trade specific states (Final Office Action p. 5) - is incorrect. The keys are not used to initiate a trade, and the fact that certain keys may be lit or not does not define how traders may trade.

Thus, the Examiner's suggestion that Kramer is a trading system because "Kramer explicitly discloses the steps

a trader goes through including how to start up the remote device, how to make trades using the remote device, and how to submit the end of day reports using the remote device" (Final Office Action p. 13) is erroneous. The Examiner's reliance on starting up a remote device and on submitting end of day reports is misplaced because those activities are directed to recording and processing data, not to trading. And the Examiner's statement that Kramer discloses "how to make trades using the remote device" is similarly in error. Nowhere in Kramer - including in the passages cited by the Examiner - is there any disclosure of "how to make trades using the remote device." To the contrary, the cited passages state that "traders execute transactions with each other and report them to the host via their PTS" (Kramer column 12, lines 3-5), confirming that the Kramer system is used for reporting trades that have already been made before entering data into the system.

Thus, the Examiner' argument that McCausland and Kramer "disclose 'defining the ability of various participants to participate in said trading activities'" (Final Office Action p. 5) is incorrect, and the Examiner's rejection of claims 1-5, 7-15 and 34 is improper.

The Examiner's inherency argument (Final Office Action p. 13) also fails. The Examiner argues that the McCausland and Kramer references:

disclose computer systems which have been programmed to execute trades. It is inherent that the computer program follows the predefined steps (way) of the program and that it would transition from one "state" to the next in accordance with the predefined steps as normally shown in a state diagram within object oriented programming.



As a threshold matter, the Examiner's reliance on Kramer is faulty because Kramer does not disclose a system that executes trades. This argument also fails because it does not pertain to the states that are claimed in claim 1 (i.e., trade states "defining the ability of various participants to participate in trading activity"). For something to be inherently disclosed by a reference, it must necessarily be present in what is disclosed by that reference. Inherency "'may not be established by probabilities or possibilities.'" *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268-69, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991).

There is no inherency here. The Examiner is relying on McCausland and Kramer simply because computer programs transition between states in a computer. Claim 1, however, is specifically directed to trading states, not generally to states that are present in a computer. Thus, the Examiner's inherency argument fails.

Nor does McCausland or Kramer disclose the claimed state "whereby the trading control logic, in response to detecting that an aggressor participant's hit or lift trade command would execute a trade in excess of what the aggressor participant may have intended, automatically enables the aggressor participant to decline, prior to execution, at least a portion of only the excess part of the trade." The passage from McCausland cited by the Examiner (Final Office Action p. 4, citing column 25, lines 8-30), simply describes that "open" orders that originated from a trader's workstation may be cancelled by the trader. Open orders are bids and offers that have not yet traded. This is not describing the claimed

state. Moreover, McCausland does not "detect" or "automatically enable" anything as recited by the claim.

Kramer does not disclose this claimed state either. Kramer is not a trading system and does not disclose any trade specific states. This is confirmed by the passage from Kramer cited by the Examiner (column 12, lines 51-61). This passage describes that if a mismatch occurs in the information about an already completed trade entered into the system by two traders, the system notifies the traders of the error. The traders may then correct the data in the system.

The foregoing remarks also apply to claims 2-5, 7-15 and 34 because each of those claims is directly or indirectly dependent from claim 1. Because claim 1 is allowable, its dependent claims are also allowable.

## 2. Claims 16-18 and 20-23

Independent claim 16 is not anticipated by McCausland or by Kramer for at least the reasons discussed below. Thus, none of dependent claims 17-18 and 20-23 is anticipated either.

As with claim 1, the Examiner in applying these references has focused on only some of the claim language. The Examiner argues that McCausland includes a "[c]ustom designed keypad with specially assigned keys" (Final Office Action p. 7). However, claim 16 actually recites:

"a trade command input means including said custom designed keypad wherein said keypad includes a plurality of trade execute keys, said keys programmed to be individually assigned to a particular security available for trading" (emphasis added).

McCausland does not disclose at least the emphasized plurality of trade execute keys, programmed to be individually assigned to a particular security available for trading. In the preferred embodiment of the '974 patent, examples of trade execute keys are the Main Function Keys BUY (or SELL) - each of which is assigned to a different one of four securities (Bond Basis, Triple Old Bond, Old Bond, and Bond). As shown in the figures of the '974 patent (e.g., Figure 3), pressing a BUY key (or a SELL key) causes a trade to be executed of the particular security to which the key is assigned.

McCausland, in contrast, shows only one HIT key and only one TAKE key. These keys are used for all securities available for trading, and are not individually assigned to particular issues. A trade as described by McCausland is executed by a trader first highlighting on the display the issue desired to be traded, then pressing HIT or TAKE, then pressing ENTER, and then pressing CONFIRM or REJECT (McCausland, column 23, lines 14-29). The HIT and TAKE keys in McCausland are not individually assigned to a particular security available for trading, and there is no teaching or suggestion in McCausland of individually assigning such keys, as the claims recite.

Kramer also does not disclose individually assigned trade execute keys. Kramer is not a trading system and so does not have trade execute keys (individually assigned or otherwise). Moreover, like McCausland, Kramer has only one BUY key and only one SELL key, which are used only for recording trades, not executing trades, for all issues (see BUY key 55 and SELL key 56 in Fig. 3a; col. 11:9-12; col. 17:43-45). A separate symbol key (SYM key in Fig. 3a) is

provided as a field key that must also be used in conjunction with the BUY and SELL keys to identify the issue that has been bought or sold (column 16, line 64 - column 17, line 26).

The Examiner's argument that it would be an "obvious" "design decision" to program the keys in McCausland and Kramer to create the claimed invention (Final Office Action pp. 13-14) likewise fails. To support this alleged combination, the Examiner relies on cash registers in the fast-food industry:

Programming such special function keys to allow a one button purchase or selection is rampant throughout society. For example, most fast food restaurant cash registers have large keypads with separate buttons for each of their products.

The Examiner relies on this "practice" that he says is "rampant throughout society" to argue that McCausland and Kramer both anticipate claim 16. Thus, the Examiner's argument is based on the combination of the functionality of keys in fast-food restaurants with the systems described in McCausland and Kramer.

As a threshold matter, the Examiner's anticipation argument based on this combination of references is fatally flawed because rejections for anticipation under 35 U.S.C. § 102 cannot be based upon a combination of references. Indeed, the Examiner tacitly admits that there is no anticipation because he resorts to the language of obviousness ("If the user consistently needs to access a few specific commodities, it is obvious that the user would program keys for those commodities" (Final Office Action p. 14, emphasis added)) to reject claim 16. None of the references cited by the Examiner provide all the limitations of the claimed

invention. Thus, the Examiner's rejection of these claims based on anticipation necessarily fails.

Even if it were proper to combine these references with a "practice" (it is not), and even if there were any motivation for making such a combination (there is none), the resulting combination would still not result in the claimed plurality of trade execute keys individually assigned to a particular security. McCausland and Kramer do not disclose this; nor does the "practice" cited by the Examiner. The keys used in the Examiner's fast-food restaurant are not trade execute keys because they are not used to execute trades. Instead, they merely record an intended trade. If the keys used in the restaurant were trade execute keys (which they are not), depressing a key would effect the physical transfer of a hamburger from the restaurant's inventory into a buyer's possession and the transfer of funds from the buyer to the restaurant. A one-button purchase key in a fast-food restaurant does not effect such a transfer. It is not a claimed "trade execute key."

Moreover, nothing cited by the Examiner - even his alleged combination - teaches or suggests a trade execute key where buyers and sellers of financial instruments may efficiently execute trades based on changing market conditions such as price, volume and issue to be traded. The trading environment to which the invention is directed is entirely different from a retail environment in which prices do not continually change. Further, no matter how prevalent the use of one button purchase keys may be in the retail environment, neither McCausland or Kramer teach or suggest such a feature.

There is no motivation to make the Examiner's proposed combination and, even if there were, the proposed combination would still not disclose all of the elements of the claimed combination. Accordingly, the Examiner erred in rejecting claim 16 and its dependent claims. Claim 16 and dependent claims 17-18 and 20-23 should therefore be allowed.

### 3. Additional Arguments - Claim 4

Claim 4, which is dependent on claim 1, further claims that trade states include "a Workup State whereby the trading control logic, in response to an aggressor participant's hit or lift of the entire volume represented by one or more passive participants' bids or offers at a trade price, enables the aggressor participant and the first-in-time of the passive participants to trade with each other additional volume of the item at the trade price to the exclusion of another participant desiring to trade."

The Examiner rejected claim 4, with its additional limitation, as anticipated by McCausland (column 23, lines 6-68) and by Kramer (Figure 2 and column 6, lines 17-39 and column 12, lines 51-61) (Final Office Action p. 5).

Claim 4 is not anticipated by either of these references. First, claim 4 cannot be anticipated because it contains all of the limitations as claim 1. Thus, claim 4 is allowable for at least the same reasons that claim 1 is allowable. In addition, nothing in McCausland or Kramer, including the portions of those references cited by the Examiner, teaches or suggests the additional limitations in claim 4 (i.e., that an aggressor participant and a first-in-time of the passive participants may trade additional volume

of an item with each other to the exclusion of other participants desiring to trade). Indeed, in connection with his rejection of other claims, the Examiner concedes that neither of these references discloses enabling a user to exclude third party participants from trading with the first participant when completing a trade with the second participant (Final Office Action p. 10). Thus, claim 4 is allowable for these additional reasons.

C.    The Rejection Of Claim 19 Under  
35 U.S.C. § 102 Is Improper

The Examiner rejected claim 19, which is indirectly dependent on claim 16 (claim 19 depends from claim 18, which depends from claim 16), under 35 U.S.C. § 102(b) as being anticipated by the McCausland reference (Final Office Action p. 8). As an initial matter, dependent claim 19 cannot be anticipated by McCausland because it includes all of the limitations of independent claim 16. For the reasons discussed above, the Examiner's rejection of claim 16 as anticipated by McCausland is incorrect. Accordingly, claim 19 is allowable for at least the same reasons that claim 16 is allowable.

Claim 19 further claims that the "Bid/Offer State is terminated by a participant entry of a hit or lift command." The Examiner rejected claim 19 as anticipated by McCausland (Final Office Action p. 8), relying on the following passage from McCausland: "Any action to 'hit' cancels an offer; a 'take' cancels a bid. A trader's input should reflect hitting or taking the exact amount of the balance which automatically cancels a trader's part of the bid or offer" (See, McCausland column 24, lines 64-67).

Contrary to what the Examiner argues, this passage does not disclose terminating a Bid/Offer state upon entry of a hit or lift. Instead, it discloses that if a trader enters a hit (sell) command, that trader's existing offer (to sell) is cancelled, and if a trader enters a take (buy) command, that trader's existing bid (to buy) is cancelled. Assuming that McCausland discloses a Bid/Offer state, that state would not be terminated as a consequence of a participant hitting a bid or taking an offer. Other bids, offers, hits and/or lifts may continue to be entered, bids and offers of other participants would remain, and trades may continue to be executed, just as they could be before a hit or lift command is entered. Thus, the Examiner's reliance on this portion of McCausland is misplaced because it does not teach or suggest terminating a Bid/Offer state upon entry of a hit or lift - it merely shows canceling a previously existing bid or offer made by the same trader who enters a hit or lift command.

Because McCausland does not support the Examiner's rejection, claim 19 is allowable for this reason, as well as for the reasons that claim 16 is allowable.

D. The Rejection Of Claims 31-  
33 and 35-37 Under 35  
U.S.C. § 103(a) Is Improper

The Examiner rejected claims 31-33 and 35-37 under 35 U.S.C. § 103(a) as being unpatentable over the McCausland and Kramer references (Final Office Action pp. 8-12). In addition, the Examiner relied on a Dutch auction reference that he provided with the Final Office Action ("Design of an Internet-based System for remote Dutch auctions," Internet Research: Electronic Networking Applications and Policy, Vol.



5, No. 4, 1995, pp. 10-16) to support his argument that these claims are unpatentable.

The Examiner's rejections fail because the cited references, even if combined, do not teach or suggest all of the elements of any of these claims.

The Examiner's rejection also fails because there is no motivation to make the combination that he suggests.

"Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability -- the essence of hindsight." *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

There is no showing of any motivation to combine the cited references as the Examiner suggests. To the contrary, the Dutch auction reference, which the Examiner includes in his improper, hindsight combination, teaches away, as discussed in more detail below, from making the Examiner's proposed combination. Accordingly, the Examiner's rejection fails and claims 31-33 and 35-37 are allowable.

1. Claims 31-33, 35 and 36

The Examiner rejected claims 31-33, 35 and 36 based on two of the same arguments that he made in rejecting claim 1 (*i.e.*, the argument about "trade commands" and the argument about a "chance to amend or cancel the trade") (compare discussion of at Final Office Action pp. 9-10 for claims 31-33, 35 and 36, with discussion at Final Office Action pp. 4-5 for claim 1. The rejection of claims 31-33, 35 and 36 on these grounds fails for the reasons set forth, above, in connection with claim 1.

The Examiner also rejected claims 31 and 32 based on the Dutch auction reference that he provided with the Final Office Action (Final Office Action pp. 10-11). As explained below, this rejection fails because there is no suggestion or motivation to combine the Dutch auction reference with Kramer or McCausland and, even if there were, the proposed combination of references would still not teach or suggest the claimed invention.

a. The "Trade Commands" Rejection  
(Claims 31-33, 35 And 36)

The Examiner repeats his claim 1 rejection based on "trade commands" in his rejection of claims 31-33, 35 and 36. This rejection is wrong, again, because the references cited by the Examiner do not teach or suggest the claimed "plurality of trade states."

As with claim 1, the Examiner acknowledges that neither McCausland nor Kramer uses the terminology "trade states," yet argues that the references disclose "defining the ability of various participants to participate in said trading activities" (Final Office Action pp. 9-10). The Examiner's argument fails because McCausland and Kramer do not disclose the claimed "plurality of trade states" (claim 31), the claimed "plurality of trade specific states" (claims 32 and 33) or the claimed "plurality of trade states" (claims 35 and 36, which are indirectly dependant on claim 1 and therefore include the "plurality of trade states" limitation of claim 1).

As described in connection with claim 1, nothing in McCausland discloses a plurality of trade states, including the McCausland passages cited by the Examiner (column 10, lines 30-51; column 11, lines 64-68 and column 23, lines 1-5).

The Kramer system is not even a trading system, as is confirmed by the passages cited by the Examiner (column 12, lines 3-5), which disclose that the Kramer system is instead used for reporting trades that have already been executed. Thus, the Examiner's argument that "both references disclose 'defining the ability of various participants to participate in said trading activities'" (Final Office Action p.10) is incorrect.

b. The "Chance to Amend or  
Cancel the Trade" Rejection  
(Claims 33, 35 and 36)

The Examiner repeats his claim 1 rejection based on a "chance to amend or cancel the trade" in his rejection of claims 33, 35 and 36. This rejection fails because the references cited by the Examiner do not teach or suggest enabling participants "to refuse or proceed with trading" as claimed.

As with claim 1, the Examiner argues that McCausland and Kramer disclose "a state in which a participant is given the chance to amend or cancel the trade" (compare Final Office Action p. 9 with discussion of claim 1 at Final Office Action pp. 4-5). This argument fails for claims 35 and 36, which depend from claim 1, for the same reason that it fails for claim 1.

The argument also fails for claim 33 because, as with claim 1, the Examiner does not apply his rejection to what is actually claimed. Claim 33 recites:

at least one of said states enables a participant,  
in response to entry by said participant of a hit or  
lift trade command within a predetermined period of  
time following entry by another participant of a bid

or offer command with respect to an item, to refuse or proceed with trading the item

Neither McCausland nor Kramer discloses this claimed state. McCausland, as is confirmed in the passage cited by the Examiner (Final Office Action p. 9, citing column 25, lines 8-30), describes that "open" orders originating from a trader's workstation may be cancelled by that trader. Open orders are bids and offers that have not yet traded. In contrast, the state claimed in claim 33 occurs when a trade is to be executed (*i.e.*, in response to entry of a hit or lift trade command). Kramer is not a trading system and does not disclose any trade specific states, much less this claimed state. Thus, neither of these references discloses enabling a participant to refuse or proceed with trading under the conditions set forth in claim 33 (Final Office Action p. 14).

c.     The Dutch Auction Rejection  
          (Claims 31 and 32)

In the June 16, 2003 Reply to Office Action, applicants/appellants addressed the Examiner's rejection, apparently with respect to claims 31 and 32, based on Official Notice of Dutch auctions (Reply p. 14). The Examiner subsequently provided a reference purportedly describing Dutch auctions, and reiterated his rejection based on the Dutch auction reference (Final Office Action pp. 10-11).

The rejection of claims 31 and 32 based on the Dutch auction reference is erroneous. First, there is no teaching or suggestion of combining the Dutch auction reference with Kramer or with McCausland. Second, even if it were proper to make such a combination, the combination would still not produce the invention of claims 31 and 32.

The last element of claim 31 recites:

"at least one of said states enables first and second participants to trade a desired volume of an item with one another at a defined price, to the exclusion of a third participant desiring to participate in the trading, until the occurrence of a predefined event and, upon the occurrence of said event, enables the third participant to trade with said first or second participants an additional volume of the item at said price without being able to exclude others from also participating in trading at the defined price."

Similarly, the last element of claim 32 recites:

"(a) first and second participants are enabled, until the occurrence of a predefined event, to trade a desired volume of an item with one another at a defined price to the exclusion of a third participant who enters a trade command to trade an additional volume at said price and, (b) upon the occurrence of said event, the entered trade command of the third participant is automatically executed without enabling the third participant to exclude others from participating in trading more volume at said price."

Neither of these elements is disclosed in McCausland or in Kramer. Indeed, the Examiner concedes that neither McCausland nor Kramer discloses enabling a user to exclude third party participants from trading with the first participant when completing a trade with the second participant (see Final Office Action p. 10).

The Examiner's attempt to create these missing elements by modifying McCausland and Kramer based on the Dutch auction reference is improper. The Examiner does not cite to any suggestion - including in the Dutch auction reference - to modify McCausland or Kramer to provide the claimed combination. Without such a suggestion, a rejection based on

obviousness fails. *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351 (Fed. Cir. 2001).

In the absence of any support for making his proposed combination, the Examiner argues that a person of ordinary skill in the art would have been motivated "to allow the user to exclude others in order to prevent a barrage of conflicting bids/offers from arriving while the user is attempting to complete the transaction with the second party" (Final Office Action p. 11). Given that motivation, however, it is apparent that after the third party is allowed to trade following an exclusive period for the first and second participants in the Dutch auction, another period of exclusivity would necessarily be provided to prevent a barrage of bids and offers arriving from other participants and interfering with the third party's negotiations. Claims 31-32, however, state that after the initial exclusive period has ended a third party can trade, but without being able to exclude others from also participating in the trading at the defined price. Thus, the motivation suggested by the Examiner for combining these references does not produce the claimed combination, but instead teaches away from it.

Nor are the Examiner's "Responses to Arguments" concerning the Dutch auction reference applicable to what is claimed in claims 31 and 32 (Final Office Action pp. 14-15). The claimed invention does not "stop" trading by preventing participants from entering trade commands. Nothing in the claims prevents third participants from entering trade commands prior to the occurrence of a predefined event. The claims simply recite that third participants wait until the predefined event occurs before their entered commands can be

executed, consistent with the object of the invention of implementing a trading system capable of high volume trading activity (see, e.g., column 3, lines 65-67). Thus, the Dutch auction reference does not disclose what is claimed.

For the reasons set forth above, none of the cited references, alone or in combination, teaches or suggests all of elements of claims 31 and 32. Accordingly, the Examiner's rejection of claims 31 and 32 under 35 U.S.C. § 103 is wrong.

## 2. Claim 37

Claim 37, which depends from claim 16, adds a limitation that the plurality of trade execute keys includes a first plurality of sell keys each assigned to a different security and a second plurality of buy keys each assigned to a different one of the same securities. Claim 37 also recites that a participant may initiate a trade to sell or buy a particular security that is being bid or offered by pressing only the sell key or the buy key assigned to that security.

Although the Examiner rejects claim 37 as obvious based on McCausland and Kramer, he concedes that neither McCausland nor Kramer explicitly disclose a keyboard that contains a plurality of buy and sell keys with one buy key and one sell key assigned to each of a plurality of specific securities (Final Office Action p. 11). Nevertheless, the Examiner argues that it would have been "obvious to one having ordinary skill in the art at the time the invention was made that a plurality of buy and sell keys could be set up, one pair for each desired security."

The Examiner's argument does not make a *prima facie* case of obviousness because none of the cited references, even if combined, teaches or suggests the limitations recited in

claim 37. The Examiner notes generally that the functionality of keys may be altered (Final Office Action p. 11), but there is no teaching or suggestion in any reference cited by the Examiner of the specific functionality that is claimed in claim 37. Thus, claim 37 is allowable. Moreover, claim 37 is allowable for the same reasons that independent claim 16 is allowable.

### 3. Additional Arguments - Claim 36

Claim 36, which depends indirectly from claim 1 (through dependent claims 5 which depends from dependent claim 4), claims that the inhibited trade command automatically executes if the period of time expires without the first and second participants transacting a trade. The Examiner has not identified any disclosure in any references that teaches or suggests the subject matter recited in claim 36. Therefore, claim 36 is allowable for this reason, in addition to being allowable for the same reasons that independent claim 1 is allowable.

#### E. The Rejection Of Claim 19 Under 35 U.S.C. § 103(a) Is Improper

The Examiner rejected claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Kramer in view of McCausland (Final Office Action p. 12). Claim 19 is indirectly dependent on claim 16, and therefore includes all of the limitations of claim 16. Claim 19 adds a limitation that "said Bid/Offer State is terminated by a participant entry of a hit or lift command."

The Examiner's rejection of claim 19 is erroneous because neither Kramer or McCausland teaches or suggests this



feature. The Examiner concedes that Kramer does not disclose terminating a Bid/Offer state upon entry of a hit or lift (Final Office Action p. 12). The Examiner attempts to find such disclosure by relying on the same portion of McCausland that he relied on in connection with his improper anticipation rejection of claim 19 (see discussion in Section C, *supra*.) McCausland does not disclose terminating a Bid/Offer state upon entry of a hit or lift. Rather, it discloses only that a trader's existing bid is cancelled when that trader enters a lift and that a trader's existing offer is cancelled when that trader enters a hit. Nothing happens to the existing bids and offers of other traders. Thus, McCausland does not teach or suggest terminating a Bid/Offer state upon entry of a hit or lift.

Because McCausland does provide the support relied on by the Examiner, claim 19 would not be obvious even if McCausland were combined with Kramer as the Examiner suggests. Moreover, the Examiner has not provided any teaching or suggestion that would motivate combining these references. Accordingly, the Examiner's rejection of claim 19 fails, and claim 19 is allowable.

#### VIII. CONCLUSION

For at least the reasons set forth above, applicants/appellants respectfully submit that this

application is in condition for allowance. The Examiner's rejections should be reversed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joel Weiss", is written over a horizontal line.

Joel Weiss

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APPENDIX A  
CLAIMS ON APPEAL

1. In combination in a data processing system for implementing a structured trading environment for transacting the purchase and sale of select items having a predetermined set of characteristics wherein said data processing system is operated by a plurality of trading participants through a communication platform to permit exchanging offers and bids and for receiving select participant trade commands relating to said items, comprising:

a plurality of workstations comprising a display means for presenting to a participant information about pending market conditions as they relate to said items being traded and bids and offers entered by other participants in regard to said items; and

a server, in communication with said workstations, programmed to support a predetermined trading control logic wherein said trading control logic comprises a protocol of trade sequences initiated from a bid/offer state by a participant hit or lift trade command wherein said protocol is directed to execute trade commands from said participants in a predefined way corresponding to a plurality of trade states defining the ability of various participants to participate in trading activity,

wherein said trade states include a state whereby the trading control logic, in response to detecting that an aggressor participant's hit or lift trade command would execute a trade in excess of what the aggressor participant may have intended, automatically enables the aggressor participant to decline, prior to execution, at least a portion of only the excess part of the trade.

2. The trading system of claim 1 wherein said protocol is defined by a stored program comprising a logic

structure that defines conditions where the aggressor participant may initiate a trade and conditions where passive participants may enter bid or offer commands to participate in the trade.

3. The trading system of claim 1 wherein said participant commands comprise bids, offers, hits and lifts.

4. The trading system of claim 1 wherein said trade states further include a Workup State whereby the trading control logic, in response to an aggressor participant's hit or lift of the entire volume represented by one or more passive participants' bids or offers at a trade price, enables the aggressor participant and the first-in-time of the passive participants to trade with each other additional volume of the item at said trade price to the exclusion of another participant desiring to trade.

5. The trading system of claim 4 wherein said trade states further include a When State whereby the trading control logic, if a first participant has entered a bid and a second participant has entered an offer, inhibits execution of a hit or lift trade command subsequently entered by a third participant to allow a period of time for the first and second participants to transact a trade with each other by one of them entering a hit or lift trade command.

7. The trading system of claim 1 wherein said trade states further include a Workdown State whereby the trading control logic, in response to an aggressor participant's hit or lift of less than the entire volume presented by one or more passive participants' bids or offers at a trade price, enables a second aggressor to hit or lift remaining untraded volume at the trade price.

8. The trading system of claim 1 wherein said display provides a presentation of a bid side and an offer side of a market.

9. The trading system of claim 8 wherein said display further provides information as to the size of uncleared bids and/or offers.

10. The trading system of claim 8 wherein said display further provides a queue of participants organized in groups corresponding to their respective participation on the bid or offer side of the market.

11. The trading system of claim 10 wherein said participant's queue is ordered by time and size of entry.

12. The trading system of claim 11 wherein said queue order is further based on quality of entry in terms of price.

13. The trading system of claim 12 wherein said display provides information regarding the entry of a hit or lift by a participant.

14. The system of claim 1, wherein said item is selected from the group consisting of commodities, securities, indices, and futures contracts.

15. The system of claim 1, wherein said item is a futures contract.

16. A computer trading system for use by multiple participants, wherein at least two of the participants each operates a custom designed keypad for data entry and receives information about market conditions from a display, the system comprising:

a data processor with associated data storage for providing a trading protocol that establishes trading hierarchy among participants;

wherein said keypad includes a plurality of trade execute keys, said keys programmed to be individually assigned to a particular security available for trading; and

said display presents to the participants price and size information for pending offers and bids for at least one of the particular securities available for trading.

17. The trading system of claim 16 wherein said input means provides single keystroke entry for trade cancel command.

18. The trading system of claim 16 wherein said data processor provides for a Bid/Offer State wherein customers' price and size are displayed on said display means.

19. The trading system of claim 18 wherein said Bid/Offer State is terminated by a participant entry of a hit or lift command.

20. The trading system of claim 18 wherein said Bid/Offer State is moved to a "When" State by a non-priority participant's entry of a hit or lift.

21. The trading system of claim 16 wherein said display means presents information on trade transactions and participant access is contingent on a system trading state.

22. The system of claim 16, wherein said bids and offers are indicative of an item selected from the group consisting of commodities, securities, indices, and futures contracts.

23. The system of claim 16, wherein said bids and offers are indicative of a futures contract.

31. In combination in a data processing system for implementing a structured trading environment for transacting the purchase and sale of select items having a predetermined set of characteristics wherein said data processing system is operated by a plurality of trading participants through a communication platform to permit exchanging offers and bids and for receiving select participant trade commands relating to said items, comprising:

a plurality of workstations, each comprising a display means for presenting to a participant information about pending market conditions as they relate to said items being traded and bids and offers entered by other participants in regard to said items; and

a server, in communication with said workstations, programmed to support a predetermined trading control logic wherein said trading control logic comprises a protocol of trade sequences initiated from a bid/offer state by a participant hit or lift trade command wherein said protocol is directed to execute trade commands from said participants in a predefined way corresponding to a plurality of trade states defining the ability of various participants to participate in trading activity, wherein:

at least one of said states enables first and second participants to trade a desired volume of an item with one another at a defined price, to the exclusion of a third

participant desiring to participate in the trading, until the occurrence of a predefined event and, upon the occurrence of said event, enables the third participant to trade with said first or second participants an additional volume of the item at said price without being able to exclude others from also participating in trading at the defined price.

32. In combination in a data processing system for implementing a structured trading environment for transacting the purchase and sale of select items having a predetermined set of characteristics wherein said data processing system is operated by a plurality of trading participants through a communication platform to permit exchanging positions regarding offers and bids and for receiving select participant trade commands relating to said items, comprising:

a plurality of workstations, each comprising a display means for presenting to a participant information about pending market conditions as they relate to said items being traded and bids and offers entered by other participants in regard to said items; and

a server, in communication with said workstations, programmed to support a predetermined trading control logic wherein said trading control logic comprises a protocol of trade sequences initiated from a bid/offer state by a participant hit or lift trade command wherein said protocol is directed to implement trade commands from said participants in a predefined way corresponding to the development of a plurality of trade specific states defining the ability of various participants to participate in said trading activity, wherein:

at least one of said states is a workup state in which (a) first and second participants are enabled, until the occurrence of a predefined event, to trade a desired volume of an item with one another at a defined price to the exclusion



of a third participant who enters a trade command to trade an additional volume at said price and, (b) upon the occurrence of said event, the entered trade command of the third participant is automatically executed without enabling the third participant to exclude others from participating in trading more volume at said price.

33. In combination in a data processing system for implementing a structured trading environment for transacting the purchase and sale of select items having a predetermined set of characteristics wherein said data processing system is operated by a plurality of trading participants through a communication platform to permit exchanging positions regarding offers and bids and for receiving select participant trade commands relating to said items, comprising:

a plurality of workstations, each comprising a display means for presenting to a participant information about pending market conditions as they relate to said items being traded and bids and offers entered by other participants in regard to said items; and

a server, in communication with said workstations, programmed to support a predetermined trading control logic wherein said trading control logic comprises a protocol of trade sequences initiated from a bid/offer state by a participant hit or lift trade command wherein said protocol is directed to implement trade commands from said participants in a predefined way corresponding to the development of a plurality of trade specific states defining the ability of various participants to participate in said trading activity, wherein:

at least one of said states enables a participant, in response to entry by said participant of a hit or lift trade command within a predetermined period of time following entry by another participant of a bid or offer command with

respect to an item, to refuse or proceed with trading the item.

34. The trading system of claim 1, wherein said trading control logic in response to the hit or lift command automatically executes that part of the trade which is not in excess of what the aggressor participant may have intended.

35. The trading system of claim 4 wherein the other participant is precluded from transacting a trade with the aggressor or passive participant until at least one of the aggressor and passive participants has finished trading.

36. The trading system of claim 5, wherein the inhibited trade command is automatically executed if the period of time expires without the first and second participants transacting a trade.

37. The system of claim 16 wherein at least one of said at least two participants can trade a plurality of securities, and wherein:

said plurality of trade execute keys includes a first plurality of sell keys each assigned to a different one of said securities, and a second plurality of buy keys each assigned to a different one of the same securities; and

whereby a participant may initiate a trade to sell or buy a particular security that is being bid or offered by pressing only the sell or buy key assigned to that security.

APPENDIX B (EVIDENCE APPENDIX)  
COPY OF OCTOBER 3, 2003 FINAL OFFICE ACTION

CP/007/14



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/859,661	05/17/2001	Stuart A. Fraser		3933

1473 7590 10/03/2003  
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EXAMINER

MYHRE, JAMES W

ART UNIT PAPER NUMBER

3622

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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FINAL

# Office Action Summary

Application No.  
09/859,661

Applicant(s)  
Fraser et al

Examiner  
James W. Myhre

Art Unit  
3622



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jun 17, 2003
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-23, and 31-37 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-23, and 31-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 9 6) ☐ Other:

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## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed on June 17, 2003 has been considered but is ineffective to overcome the McCausland et al (5,243,331) and Kramer (5,038,284) references.

The above amendment added new Claims 34-37 and amended Claims 1, 2, 4, 5, 7, 16, 21, 31, 32, and 33. Claims 6 and 24-30 were previously canceled. Thus, the currently pending claims are Claims 1-5, 7-23, and 31-37.

### *Claim Objections*

2. The amendment filed on June 17, 2003 corrected the dependency of Claim 21 as objected to in paragraph 2 of the last office action, paper number 7. Therefore, the Examiner hereby withdraws that objection.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-5, 7-15, and 34-36 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled

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in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The fourth paragraph of Claim 1 contains the limitation of “in response to detecting that an aggressor participant’s hit or lift trade command would execute a trade in excess of what the aggressor participant may have intended,”. However, the specification does not enable one of ordinary skill in the art at the time the invention was made to determine how the invention would be able to determine what *the aggressor participant may have intended*. The specification contains no reference to the aggressor participant’s intentions nor to any artificial intelligence program which could possibly be used to predict the intentions of a human participant. For purposes of examination, the Examiner will consider this limitation as meaning that the invention will ensure that the trade is within the normal preset guidelines, i.e. minimum or maximum bid, offer, or quantity, such as is standard practice within the industry.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-5, 7-18, 20-23, and 34 are rejected under 35 U.S.C. 102(b) as being separately anticipated by McCausland et al (5,243,331) and Kramer (5,038,284). In order to provide a more

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concise action on this application, the Examiner will cite features of the claim followed by citation of the appropriate passages from each of the two references. However, the Applicant should consider each reference as a separate and distinct rejection under 35 U.S.C. 102(b).

Claim 1: McCausland and Kramer each disclose a computer trading system, comprising:

a. Workstations with displays for presenting pending market conditions

(McCausland, Figure 2)(Kramer, Figure 3a and col 11, lines 9-12);

b. A server programmed to conduct trading sequences responsive to trade

commands received from the workstation users (McCausland, Figure 1; col 22, lines 43-63; and col 24, lines 7-67)(Kramer, col 5, lines 23-31 and col 9, lines 42-65); and

c. A state in which the participant is given the chance to amend or cancel the trade

prior to the automatic execution of the trade (McCausland, col 25, lines 8-30)(Kramer, col 12, lines 51-61).

While neither reference uses the terminology “trade states” to describe various parts of the computer trading system operation, McCausland discusses that the system can monitor the scheduling of operations and can “change the operational state of the market memory program 90 according to a predetermined time schedule” (col 10, lines 45-51) and during a fatal error recovery will “re-build the exact state of the market prior to the fatal error” (col 10, lines 30-44). McCausland further discloses using a menu program which will display to the user a list of choices, “and the user is prompted for selection, which will be the next programs to run” (col 11, lines 64-68). McCausland also discloses that at least some of the data being displayed changes to



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a default condition upon the user pressing the Bid, Offer, Hit, or Take keys (col 23, lines 1-5) with the defaults being unique and different for each of these keys. Kramer discloses that in response to menu selections (i.e. pressing the Hit key, the Bid key, etc.) certain keys will “light up to indicate which are appropriate answers to menu questions” (col 4, lines 37-40 and Claim 7). Therefore, both references disclose “defining the ability of various participants to participate in said trading activities” which is the Applicant’s definition of trade specific states in Claim 1.

Claim 2: McCausland and Kramer each disclose a computer trading system and in Claim 1 above, and further disclose that the system is run using a stored program that controls the trading (McCausland, col 8, lines 25-57)(Kramer, col 10, line 30 - col 11, line 30).

Claim 3: McCausland and Kramer each disclose a computer trading system as in Claim 1 above, and further disclose the user entering commands such as bids, offer, hits, or lifts (McCausland, col 22, lines 64-68)(Kramer, col 12, lines 3-37).

Claims 4, 5, and 7: McCausland and Kramer each disclose a computer trading system as in Claim 1 above, and further disclose the trading states comprising Workup, Workdown, and When states as defined in the table in Figure 11 (McCausland, col 23, lines 6-68)(Kramer, Figure 2 and col 6, lines 17-39 and col 12, lines 51-61).

Claims 8: McCausland and Kramer each disclose a computer trading system as in Claim 1 above, and further disclose display a bid side and an offer side or a market (McCausland, col 18, lines 49-57 and col 20, lines 25-26)(Kramer, Figure 3a and col 12, lines 10-12).

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Claim 9: McCausland and Kramer each disclose a computer trading system as in Claim 8 and further disclose displaying information as to the size of uncleared (unreconciled) bids and offers (McCausland, col 18, lines 49-57)(Kramer, col 12, lines 43-46).

Claims 10-12: McCausland and Kramer each disclose a computer trading system as in Claim 8 above, and further disclose display a list (queue) of bids and offers showing the participants, time and size of entry, and price (McCausland, Figures 6-9 and col 18, line 34 - col 22, line 38)(Kramer, Figure 3a; col 12, lines 3-13; and col 20, lines 43-65).

Claim 13: McCausland and Kramer each disclose a computer trading system as in Claim 12 above, and further disclose displaying information regarding the hits or lifts by the participant (McCausland, col 20, lines 25-26)(Kramer, Figure 3a and col 12, lines 10-12).

Claim 14: McCausland and Kramer each disclose a computer trading system as in Claim 1 above, and further disclose the item being a commodity, security, index, or futures contract (McCausland, col 1, lines 30-33 and col 4, lines 8-14)(Kramer, col 1, lines 8-52).

Claim 15: McCausland and Kramer each disclose a computer trading system as in Claim 1 above, and further disclose the bids and offers pertain to a futures contract (McCausland, col 14, lines 19-20)(Kramer, col 1, lines 8-52).

Claim 16: McCausland and Kramer each disclose a computer trading system, comprising:

- a. Data processor for providing a trading protocol (McCausland, col 10, lines 45-51)(Kramer, col 9, lines 42-65);

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b. Custom designed keypad with specially assigned keys (McCausland, Figure 3 and col 6, line 42 - col 8, line 23)(Kramer, Figure 3a and col 16, table); and

c. Display for presenting pending bids and offers (McCausland, col 24, lines 2-5)(Kramer, Figure 3a and col 11, lines 9-12).

Claim 17: McCausland and Kramer each disclose a computer trading system as in Claim 16 above and further disclose a Cancel key (McCausland, “reject” col 7, lines 43-47 and col 23, lines 27-29)(Kramer, “NT”, col 16, table).

Claim 18: McCausland and Kramer each disclose a computer trading system as in Claim 16 above, and further disclose displaying the price and size of the bids and offers (McCausland, col 18, lines 49-57 and col 20, lines 25-26)(Kramer, Figure 3a and col 12, lines 10-12).

Claim 20: McCausland and Kramer each disclose a computer trading system as in Claim 18 above, and further disclose moving to the When state (waiting) when a non-priority participant enters a hit or lift (entry while unreconciled entries are outstanding)(McCausland, col 9, lines 48-55; col 19, lines 28-38; and col 22, lines 41-62)(Kramer, col 12, lines 51-61).

Claim 21: McCausland and Kramer each disclose a computer trading system as in Claim 16 above, and further disclose presenting (displaying) information based on the current trading state (i.e. bid information is displayed while in the bid state, offer information is displayed while in the offer state, etc.)(McCausland, Figures 6-9 and col 7, lines 7-38)(Kramer, Figure 3a and col 25, lines 9-16).

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Claim 22: McCausland and Kramer each disclose a computer trading system as in Claim 16 above, and further disclose the item being a commodity, security, index, or futures contract (McCausland, col 1, lines 30-33 and col 4, lines 8-14)(Kramer, col 1, lines 8-52).

Claim 23: McCausland and Kramer each disclose a computer trading system as in Claim 16 above, and further disclose the bids and offers pertain to a futures contract (McCausland, col 14, lines 19-20)(Kramer, col 1, lines 8-52).

7. Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by McCausland et al (5,243,331).

Claim 19: McCausland discloses a computer trading system as in Claim 16 above, and further discloses terminating the bid/offer state upon entry of a hit or lift (col 24, lines 64-67).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 31-33 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCausland et al (5,243,331) and Kramer (5,038,284). In order to provide a more concise action

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on this application, the Examiner will cite features of the claim followed by citation of the appropriate passages from each of the two references. However, the Applicant should consider each reference as a separate and distinct rejection under 35 U.S.C. 103(a).

Claims 31-33, 35, and 36: McCausland and Kramer each disclose a computer trading system, comprising:

- a. Workstations with displays for presenting pending market conditions (McCausland, Figure 2)(Kramer, Figure 3a and col 11, lines 9-12);
- b. Central server programmed to conduct trading sequences responsive to trade commands received from the workstation users (McCausland, Figure 1; col 22, lines 43-63; and col 24, lines 7-67)(Kramer, col 5, lines 23-31 and col 9, lines 42-65); and
- c. A state in which the participant is given the chance to amend or cancel the trade (McCausland, col 25, lines 8-30)(Kramer, col 12, lines 51-61).

While neither reference uses the terminology “trade states” to describe various parts of the computer trading system operation, McCausland discusses that the system can monitor the scheduling of operations and can “change the operational state of the market memory program 90 according to a predetermined time schedule” (col 10, lines 45-51) and during a fatal error recovery will “re-build the exact state of the market prior to the fatal error” (col 10, lines 30-44). McCausland further discloses using a menu program which will display to the user a list of choices, “and the user is prompted for selection, which will be the next programs to run” (col 11, lines 64-68). McCausland also discloses that at least some of the data being displayed changes to

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a default condition upon the user pressing the Bid, Offer, Hit, or Take keys (col 23, lines 1-5) with the defaults being unique and different for each of these keys. Kramer discloses that in response to menu selections (i.e. pressing the Hit key, the Bid key, etc.) certain keys will “light up to indicate which are appropriate answers to menu questions” (col 4, lines 37-40 and Claim 7). Therefore, both references disclose “defining the ability of various participants to participate in said trading activities” which is the Applicant’s definition of trade specific states in Claim 1.

While neither reference explicitly discloses enabling the user to exclude or include third party participants from trading with the first participant when completing a trade with the second participant, Official Notice is taken that it is old and well known in the negotiation and auction arts that third party participants can be allowed to participate (included) or prevented from participating (excluded) during the negotiation and consummation of a transaction between the first and second parties. For example, in the normal Dutch (reverse) auction in which a first party is offering a quantity of a product for sale, when a second party enters a bid at a certain price, the auction is stopped while the second party is queried as to the desired quantity of the items. The second party is given a specified amount of time, such as two minutes, in which to consummate the trade. During this time, none of the third parties may enter bids nor participate in the negotiation of the quantity, i.e. they are excluded. However, if the second party does not purchase all of the items, third parties may be allowed to buy the remaining items at the same price as the second party, i.e. they are included (in support of this Official Notice, See Rockoff et al, “Design of an Internet-based System for Remote Dutch Auctions”, page 11). McCausland

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asks the user to Confirm or Reject the second party's bid/offer (col 20, lines 58-61) and discusses the differences between a "single-order" trader and a "multi-order" trader (col 22, lines 41-63) and how partial hits or offers are handled (col 24, line 64 - col 25, line 3). Kramer discusses at length how two traders resolve conflicts with unreconciled trades through one-on-one negotiation (col 12, lines 38-61). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to allow the user (first party) to include or exclude other parties when consummating a trade with the second party. One would have been motivated to allow the user to exclude others in order to prevent a barrage of conflicting bids/offers from arriving while the user is attempting to complete the transaction with the second party.

Claim 37: Kramer and McCausland each disclose a computer trading system with a custom designed keyboard as in Claim 16 above, but neither explicitly disclose that the keyboard would contain a plurality of buy and sell keys with one buy key and one sell key assigned to each of a plurality of specific securities. However, Kramer discloses using special function keys on the keyboard to provide simplified data entry and further discloses altering these function keys to provide the desired functionality (col 3, line 63 - col 4, line 4). McCausland also discloses a special purpose keypad with a variety of special functions assigned to the function keys. While one exemplary mapping is disclosed, it is also disclosed that "other mappings of keypad 200 are possible and are contemplated" (col 6, line 40 - col 8, line 23). Thus, both references disclose that the keys on the keyboard/keypad may be altered to provide the desired functionality. The Examiner also notes that it is common for data processing keyboards to have 10-12

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programmable function keys. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made that a plurality of buy and sell keys could be set up, one pair for each desired security. One would have been motivated to set up special buy and sell keys for specific securities in order to increase the speed in which the operator could enter selections as discussed as being desirable by both references.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer (5,038,284) in view of McCausland et al (5,243,331).

Claim 19: Kramer discloses a computer trading system as in Claim 16 above, but does not explicitly disclose terminating the bid/offer state upon entry of a hit or lift. However, McCausland discloses a similar computer trading system in which the bid/offer state is terminated upon entry of a hit or a lift (col 24, lines 64-67). Therefore, it would have been obvious to terminate the bid/offer state in Kramer when a hit or lift was entered. One would have been motivated to terminate the bid/offer state in order to allow the trader to process other actions after the pending bid/offer had been fulfilled by the hit or lift.

#### ***Response to Arguments***

11. Applicant's arguments filed June 17, 2003 have been fully considered but they are not persuasive.



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A. The Applicant argues that the Examiner has not taken into account all the claim language citing the language in Claim 1 as an example. The Examiner notes that the functionality of the claim has been addressed. The claim cites a control logic, i.e. computer program, which executes trade commands in a predefined way according to the “state” of the trading activity. The references disclose computer systems which have been programmed to execute trades. It is inherent that the computer program follows the predefined steps (way) of the program and that it would transition from one “state” to the next in accordance with the predefined steps as normally shown in a state diagram within object oriented programming.

B. The Applicant argues that Kramer does not disclose a trading system, but merely a system for processing data concerning trades made outside of the system. The Examiner notes that Kramer explicitly discloses the steps a trader goes through including how to start up the remote device, how to make trades using the remote device, and how to submit the end of day reports using the remote device (col 11, line 38 - col 12, line 37). Thus, the reference is clearly a trading system.

C. The Applicant argues in reference to Claim 16-18, 20-23, and 37 that McCausland and Kramer do not disclose that the custom designed keypad include keys that are assigned to a particular security. This has been addressed in the rejection above. McCausland’s disclosure that many different mappings of keys to function can be made renders it a design decision by the user on how to program (map) each key. Likewise, Kramer explicitly discloses that the user can program the function keys to perform specific functions. Programming such special function keys

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to allow a one button purchase or selection is rampant throughout society. For example, most fast food restaurant cash registers have large keypads with separate buttons for each of their products. The salesperson only has to press a single button in order to indicate a purchase of that product. In each case, the manager has the option to (re)program the buttons to the desired function. Both references disclose similar reprogrammable keys on their keyboards. As noted above, it would be a design decision of the user on how the various keys would be programmed. If the user consistently needs to access a few specific commodities, it is obvious that the user would program keys for those commodities. If, on the other hand, the user was a “generalist” and covered dozens or hundreds of commodities with similar frequency, then the user may want to program the keys to perform other frequently used functions instead. Again, this is a design decision that does not affect the steps of the claimed method of trading.

D. The Applicant argues in reference to Claims 31-33 that there is no Second Look State nor related functionality in the claims. The Examiner has removed the phrase “Second Look State” from the rejection as per the Applicant’s removal of the same phrase from the amended claims. However, both references still disclose giving the user a chance to refuse or proceed with the trade, i.e. cancel, modify, or approve the trade, within a specified time limit.

E. The Applicant attempted to traverse the Official Notice taken in the previous Office Action pertaining to Dutch Auctions and the exclusion of third parties while a trade is consummated, and requested a reference in support of the Official Notice. While the arguments are not persuasive, a reference describing Dutch Auction methods are been provided.

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Furthermore, in response to the Applicant's argument that it would not have been obvious to combine the cited trading systems with the Dutch Auction feature, the Examiner notes that in both cases an agreed upon transaction (trade) is being consummated, and it would have been obvious to "stop" the trading (offers/bids) until the current trade had been completed. If in either instance the user continued to receive additional offers/bids, given the relatively small display screens being used, it would have been difficult if not impossible for the user to finish any trade/auction.

F. The Applicant's arguments in reference to Claim 19 have been addressed above.

### *Conclusion*

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Exr. James W. Myhre whose telephone number is (703) 308-7843. The examiner can normally be reached on weekdays from 6:30 a.m. to 3:30 p.m.

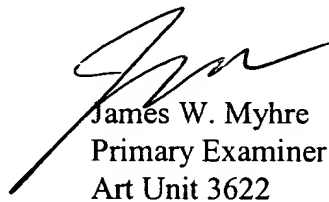
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Stamber, can be reached on (703) 305-8469. The fax phone number for Formal or Official faxes to Technology Center 3600 is (703) 872-9306. Draft or Informal faxes may be submitted to (703) 872-9327 or directly to the examiner at (703) 746-5544.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (703) 308-1113.



JWM

September 24, 2003



James W. Myhre  
Primary Examiner  
Art Unit 3622



FORM PTO-1429

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICETHIRD SUPPLEMENTAL INFORMATION DISCLOSURE  
STATEMENT BY APPLICANTSATTY. DOCKET NO.  
CF-007 ReAPPLICATION  
NO. 09/859,661APPLICANTS  
Fraser et al.CONFIRMATION  
NO. 3933FILING DATE  
May 17, 2001GROUP  
2161

#9

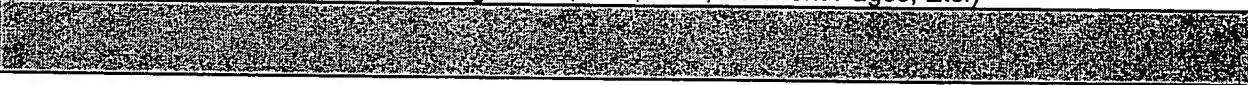
## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
<i>FW</i>	5,375,055	12/20/94	Togher et al.	705	37	

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIAL	
<i>FW</i>	
<i>FW</i>	CFTS Support Procedures
	Portions of the System 3.0 Software Source Code

EXAMINER

James W. MYHRE

DATE CONSIDERED 24 Sep 03

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicants.

<b>Notice of References Cited</b>	Application/Control No. <b>09/859,661</b>	Applicant(s)/Patent Under Reexam <b>Fraser et al</b>	
	Examiner <b>James W. Myhre</b>	Art Unit <b>3622</b>	Page 1 of 1

**U.S. PATENT DOCUMENTS**

	Document Number <small>Country Code-Number-Kind Code</small>	Date <small>MM-YYYY<sup>1</sup></small>	Name	Classification <sup>2</sup>
A				
B				
C				
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**FOREIGN PATENT DOCUMENTS**

	Document Number <small>Country Code-Number-Kind Code</small>	Date <small>MM-YYYY<sup>1</sup></small>	Country	Name	Classification <sup>2</sup>
N					
O					
P					
Q					
R					
S					
T					

**NON-PATENT DOCUMENTS**

	Include, as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
U	Rockoff, Todd E.. and Grove, Michael; "Design of an Internet-based System for remote Dutch Auctions", Internet Research: Electronic Networking Applications and Policy, Vol 5, No 4, 1995, pp 10-16.
V	
W	
X	

\* A copy of this reference is not being furnished with this Office action. See MPEP § 707.05(a). <sup>1</sup> Dates in MM-YYYY format are publication dates. <sup>2</sup> Classifications may be U.S. or foreign.

APPENDIX C (EVIDENCE APPENDIX)  
COPY OF REFERENCE ENTERED BY THE EXAMINER IN OFFICE  
ACTION MAILED DECEMBER 18, 2003 - U.S. PATENT NO. 5,038,284

APPENDIX D (EVIDENCE APPENDIX)  
COPY OF REFERENCE ENTERED BY THE EXAMINER IN OFFICE  
ACTION MAILED DECEMBER 18, 2003 - U.S. PATENT NO. 5,243,331



APPENDIX E (EVIDENCE APPENDIX)  
COPY OF REFERENCE ENTERED BY THE  
EXAMINER IN OFFICE ACTION MAILED OCTOBER 3, 2003 -  
DESIGN OF AN INTERNET-BASED SYSTEM FOR REMOTE DUTCH AUCTIONS

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## Design of an Internet-based system for remote Dutch auctions

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Todd E. Rockoff and  
Michael Groves

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### The authors

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### Abstract

Outlines the principle of the Dutch auction, whereby the price begins at a high level and decreases by steps until a bid is made. Describes an integrated hardware and software system which uses Internet communications to enable remotely located bidders to participate in real-time Dutch auctions and which meets the stringent requirement that synchrony be maintained among bidders' terminals to ensure that each bidder has a fair chance to bid at the current offer price. Defines the principal functions of the system and characterizes its available resources. Illustrates implementation using a prototype design. Pays particular attention to bidder terminal synchronization, bidder authentication, and auction client security. Includes the possibility of a system variant using ISDN interconnect and PC-based bidders' terminals.

### Introduction

Our society is enjoying unprecedented growth in telecommunications infrastructure. Steadily increasing data rates are available for decreasing cost to the consumer. This performance/cost ratio improvement will give rise to the infobahn, a multipurpose information superhighway through which many varied services and information products will be provided to consumers.

As a precursor of the infobahn, the present tariff-free Internet facilitates inexpensive trials of collaboration functions and their implementations. Already, functions abound for exchange of information in an offline or *distemporaneous*[1] manner. Examples of well-known tools for distemporaneous interaction include physical post, electronic mail and fax. New network services, including the World Wide Web (EARN Association, 1994) and video-on-demand (Delodderie *et al.*, 1994), represent a next generation of distemporaneous services.

Communication via the written word has made distemporaneous collaborations an inherent aspect of civilization. Note that written media lend themselves nearly as readily to *remote* distemporaneous collaborations as to *local* collaborations, with the only difference being for remote distemporaneous collaboration: the need to move the printed page across the distance between collaborators. Over the last 30 years, computer networks have facilitated people working together despite being separated by significant distance.

In *contemporaneous* collaboration, people work together with instantaneous (or near-instantaneous) interaction. People in a common place at any given time have the opportunity to interact contemporaneously. The archetypal tool for remote contemporaneous interaction is the telephone, which allows contemporaneous sharing of audio spaces. Remote contemporaneous interaction is only about 100 years old. The telephone stands today as probably the single most heavily used business tool, more important

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David Arthur, Don Glastonbury, and Darryl Sharman implemented the prototype auctioneer server and bidder client processes. Craig Cowling initially defined the problem and provided useful comments and suggestions. Tony Sweetnam described an electronic auction system that he built for the Sydney fish market.

than paper and pencil, the World Wide Web, or even fax. With the imminent deployment of the infobahn, we can look forward to contemporaneous sharing of video and computer-based information spaces, in addition to audio spaces.

One exciting possibility for contemporaneous interaction is extending the practice of working shoulder-to-shoulder at a chalkboard to contexts involving remote collaborators (Bergmann *et al.*, 1992; Rockoff *et al.*, 1992; Stefik *et al.*, 1987). The desirability of remote contemporaneous interaction around shared computer-based information is highlighted by the observation that, while it is difficult for more than two people to stand shoulder-to-shoulder at a whiteboard, it is a relatively simple matter for two, or even 200, people to work together at once on a spreadsheet or plan shared via the Internet.

Another exciting possibility for contemporaneous remote interaction is to facilitate *ad hoc* interactions, such as occur every day in office environments among coworkers. (Community consensus is often forged in the tea room!) The telephone is commonly used for *ad hoc* contemporaneous interaction, but offers information sharing limited only to audio. The Internet allows *ad hoc* interactions to encompass other modes of business interaction requiring various forms of visual information.

This article focusses on a specific type of commercial activity, the Dutch auction.

### Functions for remote Dutch auctions

The auction is a time-critical commercial activity, wherein the price of some good on offer is determined. In conventional auctions, the price of goods is driven higher by competitive bidding. In the so-called Dutch system of auctions, the auctioneer begins at a high price and then descends by steps until a bidder indicates his intention to buy at the price level reached. The successful bidder then nominates all or part of the goods on offer. If any goods remain in the current lot, the auctioneer increases the offer price by a predetermined amount and resumes the auction. The auction continues in this fashion until either the current lot is exhausted or its reserve price has been reached.

The Dutch auction was developed in The Netherlands in the seventeenth century for the sale of large volumes of flowers. This auction

system has come to be seen as an effective means of selling any type of perishable commodity. Dutch auctions are also suitable for perishable goods because the offer price is linked to the declining value of goods with time. Dutch auctions are also suitable for commodities because provision is made for successful bidders to nominate only fractions of the goods on offer. Conventional auctions are best suited for unique items, such as real estate or works of art.

Dutch auctions share with conventional auctions the sometimes inconvenient requirement that bidders and auctioneer occupy a single location wherein the auction takes place[2]. This requirement is acutely onerous for perishable goods, as it would be preferable for bidders to be able to make contracts for perishable goods immediately as lots are made available by suppliers. The desirability of removing the single-location requirement strongly motivates providing a remote auction capability.

Central to the Dutch auction is an auction clock displaying the current offer price. For remote auctions, this clock must be replicated at each remote bidder location. Electronic Dutch auction clocks are suitable for this application.

### Software and hardware

Figure 1 shows the system software architecture. A client/server interaction coordinates the auction participants' terminals through the Internet. A single server process is associated with the auctioneer, and a unique client process is associated with each bidder. Every auction process runs locally on a computer alongside the process which manages that participant's display. (In our prototype, the displays are managed by the X window system (Nye, 1990)).

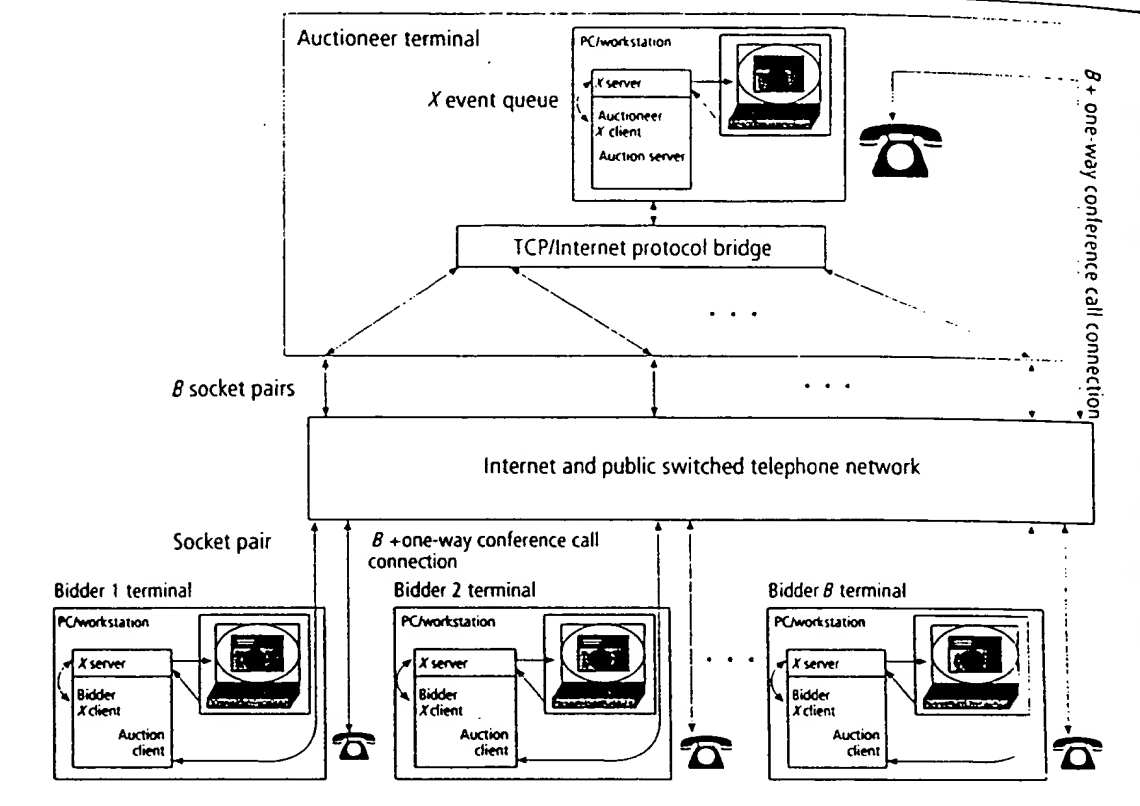
Bidder equipment includes the following:

- PC (running Windows NT) or workstation (running Unix);
- ISDN terminal adapter;
- bidder X client program; and
- auction client program.

Auctioneer equipment includes the following:

- PC (running Windows NT) or workstation (running Unix);

Figure 1 Client/server remote auction architecture



- ISDN terminal adapter;
- auctioneer X client program;
- auction server program;
- ISDN PABX; and
- TCP/IP bridging capability.

- 1 purchased amount is then subtracted from the
- 2 quantity of product on offer and the auction
- 3 clock is restarted. The purchasing transaction
- 4 may take only seconds to complete.
- 5 At any point during the auction, a bidder is
- 6 free to browse the auction catalog. Figure 3

### Bidder and auctioneer interfaces

Figure 2 shows the bidder's screen during an auction. Key information presented to the bidder includes the following:

- auction clock showing the current offer price;
- catalog information (current and next lots);
- quantity of product on offer; and
- personal account information.

When the offer price reaches a value agreeable to the bidder, the bidder indicates that fact by clicking the "bid" button on the display. When any bidder has clicked the "bid" button, the auction clock is stopped. At that point, the bidder enters the amount of product he or she wishes to purchase at the indicated price. That transaction is recorded in the auctioneer's database, from which invoices and shipment schedules may be generated automatically. The

Figure 2 Bidder terminal interface in bidding mode

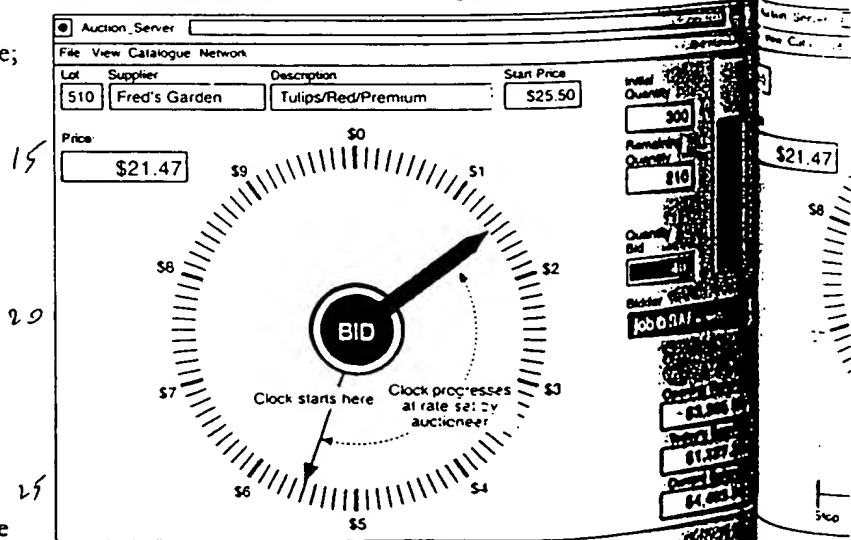
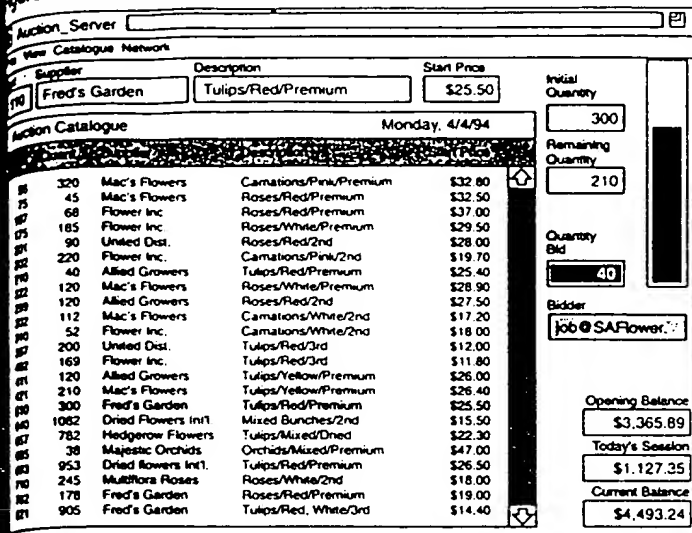


Figure 3 Bidder terminal interface in catalog mode



shows how the catalog might appear. The catalog lists, in order, the lots of products to be offered. With each lot is associated the following information:

- total quantity available;
- supplier;
- quality estimate; and
- starting price.

Figure 4 shows the auctioneer's screen during the auction. A key component of the auctioneer's interface that is not available to any bidder is the "clock rate" slider. By clicking and dragging the indicator along the slider, the auctioneer dynamically determines the rate at which the auction clock progresses. Presumably

the auctioneer applies his business savvy and knowledge of the bidder group in setting the auction clock rate. Other controls available to the auctioneer during the auction include those for initializing, stopping, and restarting auctions, and also for checking account and invoice information.

Preparation of the auction catalog, a key task to be performed on behalf of the seller, is likely done by the auctioneer's staff. For simplicity, we assume the necessary catalogs to have been prepared prior to commencement of the daily auction.

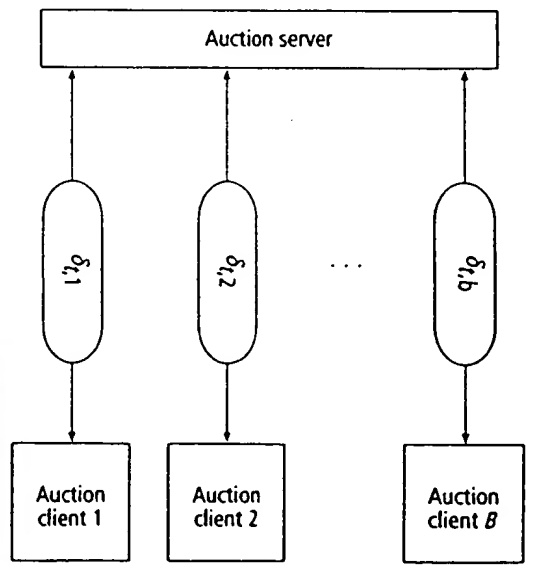
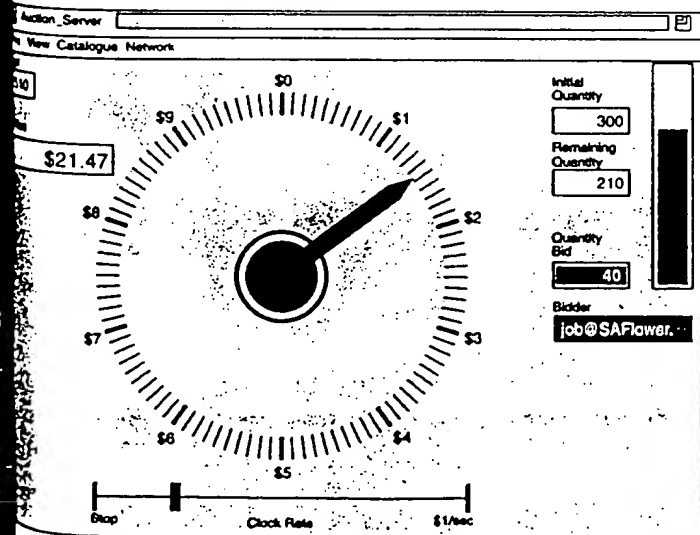
### Bidder terminal synchronization

This section discusses aspects of the bidder terminal synchronization problem and presents candidate solutions.

Figure 5 shows a model for the delay characteristics of Internet packet transmission, in which  $\delta_{pb}$  represents the packet latency between the auction server and auction client number  $B$  at auction time  $t$ . To maintain bidding fairness, the auction system must compensate for transmission delays. The transmission delays have the following unfortunate characteristics:

Figure 5 A delay model for client/server communication through Internet. There are  $B$  bidders and one auctioneer. For  $1 \leq b \leq B$ , the parameter  $\delta_{pb}$  represents the packet latency between the auction server and auction client number  $b$  at auction time  $t$

Figure 4 Auctioneer terminal interface



- Transmission delays vary among terminals, that is,  $\sigma_{pn}$  is not necessarily equal to  $\sigma_{pm}$  when  $n \neq m$ .
- Transmission delays vary among packets transmitted to/from a given terminal, that is,  $\delta_{x,b}$  is not necessarily equal to  $\delta_{y,b}$  when  $x \neq y$ .

One solution to this problem would be to operate the auction at low speed, so that the time step of the auction clock is much greater than the worst-case communication delay among terminals.

The low-speed approach amounts to constraining all auction terminals to lie within a single *isochronous* region. Within an isochronous region, communication delays among subsystems are negligible with respect to the characteristic latencies of the circuit components used to implement the subsystems (Seitz, 1980).

Worst-case round-trip Internet packet latencies range between one and two seconds (Mills, 1991). To be safe, isochronous operation of the auction system allows at most one auction clock tick every three seconds or so. Our observations of the flower markets operating in Amsterdam in 1994 suggest that clocks tend to run at fixed, high rates, and that the bid-increment restart cycle takes about one second. Clearly, artificially slowing the auction clock to allow remote bidders to participate would prevent the remote system from being used with the same degree of subjective interactivity as single-location auctions enjoy.

An alternative solution to the synchronization problem is to compensate auction clock skew explicitly. Skew could be compensated using a variant of software phase-lock loops, or PLLs (Massalin, 1992, Ch. 6).

Using PLLs, the auction server broadcasts progressive values of the auction clock to all of the auction clients. Although the auction clock itself does not progress at a fixed frequency, as it is under the control of a slider on the auctioneer's terminal, it is reasonable to arrange for the succession of packets updating the auction clock to be multicast at regular intervals. These packets, broadcast at a fixed frequency, provide a basis on which each bidder terminal measures variations in network latency. By interpolating among successive measurements, the bidder

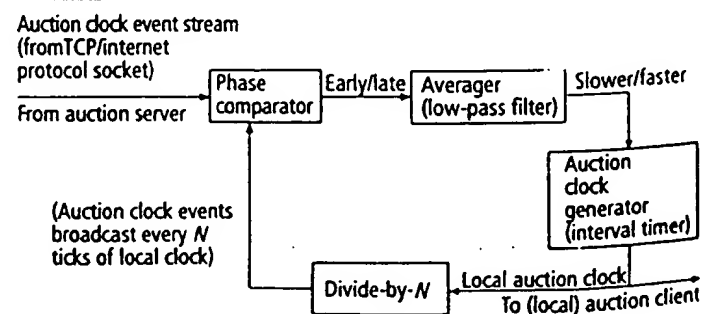
terminal software compensates for varying transmission delays.

The key to synchronization is a variant of the hardware phase-lock loop. We are not aware that PLLs have been used in a context like this one. For example, remote trading on the New York stock exchange is not synchronized, to some individuals' enormous benefit (Donner, 1994). Hardware PLLs have been used in another context to maintain low skew among many local high-rate clocks under the control of a low-frequency broadcast clock signal (Rockoff, 1993, p. 52).

Figure 6 shows the components of a software implementation of a phase-lock loop. Ordinary PLL designs assume that the reference signal's phase and frequency do not change rapidly. Unfortunately, a clock signal broadcast through the Internet will be delayed variously and unpredictably. Variations introduce jitter into the received clocks, which could cause the clock as seen at the bidder terminal to progress spasmodically and out of step with the clock seen at other bidders' terminals. A key pair of questions that we are currently investigating are: at what frequency do typical (or worst-case) Internet transmission delay variations occur, and what is the critical jitter value for commercial acceptance of remote auctions? For the auction system to be practical, the jitter resulting from those delay variations must be below the tolerance threshold of the bidders. Given that current stock market trading, also time-critical, occurs remotely without the benefit of any clock skew compensation, we suspect that the synchronization problem has a practical solution.

With the PLL approach, the minimum interval for broadcasting an auction clock update is limited by the PLL jitter. We intend to study the

Figure 6 Software phase-lock loop



jitter effects, perhaps using a model similar to that described by Nowatzky (1989).

An unfortunate characteristic of many existing connections in the Internet is that they are unreliable. Sometimes the Internet is partitioned, such that there are at least two sets of network nodes between which packets cannot flow. Network partitions occurring regularly during remote auctions would pose a significant obstacle to commercial acceptance. Fortunately, network partitions are increasingly uncommon as the number of redundant links in the Internet increases. This redundancy increases the likelihood that when one router goes down, traffic may detour successfully through another router.

There is a simple solution to the problem of what to do when a bidder's terminal becomes isolated from the auctioneer's terminal: when the auctioneer's terminal detects that a bidder's terminal has become isolated (for example, through an always-running synchronization/authentication protocol), it is reasonable for that bidder's authentication ticket to expire and for that bidder to be deemed to have withdrawn from the auction.

### Bidder terminal security

#### Authentication

To function effectively, a remote auction system must allow a bidder to commit funds to purchase goods. This requirement means that the system must be able to verify the identity of a bidder. This identification problem is solved with the use of personal identification codes in common economic contexts including electronic funds transfer at point-of-sale systems and automatic teller machines.

It may be possible to integrate one of the many currently available authentication protocols with the remote Dutch auction system's clock update protocol (Gollman *et al.*, 1993).

#### Integrity

A remote auction system must tolerate variations in communication delays from the bidders' terminals. This means that bids which arrive at the auction server stamped with an "old" auction time value must be considered legitimate. But there is a clear economic motivation for a bidder to exploit this tolerance to

advantage. Typically, a bidder desires first access to the goods on offer but wishes to pay the least price. There is an incentive, therefore, for the bidder to tamper with the auction client software to install the following algorithm: wait until notification of a successful bid is received, then respond immediately with a slightly higher "backdated" bid. The tampering bidder thus attains first access at the goods on offer for the lowest possible cost.

Note that tamper prevention arises in other economic contexts, including electronic funds transfer at point-of-sale systems and automatic teller machines. The problem is more significant for the system described here because the remote bidder has unrestricted physical access to the PC on which the auction client runs.

### Conclusion

This article describes a system for remote Dutch auctions which represents a new commercial possibility for the coming infobahn. The system utilizes existing infrastructure at low cost to provide the requirements of a compelling contemporaneous remote group work function.

This system leverages the flexible, extensible nature of the Internet, illustrating a manner in which infobahn-based systems may fit within existing commercial activity contexts. This article demonstrates that practical systems for remote group work need not await further extensions of infrastructure, but rather can be lashed together using currently available technologies. This system illustrates how the infobahn may be used in the future.

This example suggests that putting the existing infrastructure to work is straightforward, although there remain a number of fundamental challenges, including multiterminal synchronization through channels with time-varying communication delays, authentication of remote terminals, and tamper-protection of the auction client program. Given solutions to these fundamental problems, the key to providing new information services in the future lies in identifying precisely the functions required of a given commercial activity, and then providing those functions through appropriate software clients interacting with servers via a network. This point of view appears to be gaining increasing currency in the literature (Kraut *et al.*, 1992).

Systems such as the one described here are inexpensive to build and run, while extremely powerful, portable, and extensible. Such systems should be commercially compelling. Why are more not being built? Perhaps they are, although the general populace is slow to understand and exploit the possibilities afforded by the continually improving communications infrastructure.

We have implemented a prototype that incorporates readily available hardware connected to the Internet. This remote Dutch auction system is but one of many demonstrations of the flexible and extensible nature of the Internet. Exploiting this extensibility, we have illustrated a commercially compelling collaboration function, discovered some difficulties inherent in remote implementation of such functions, and posited satisfactory ways to overcome those difficulties.

The ease of moving from conception to implementation of this remote Dutch auction system leads us to expect there to be a large number of specific-purpose collaboration systems contributed by individuals as the information superhighway is installed. We further expect problems of synchronization, authentication, and tamper-protection to appear in other contexts. Builders of future systems may find useful the solutions described herein, and hopefully they will improve on them.

## Notes

- 1 The alternative term *asynchronous* has also been used previously for this mode of interaction (Bergmann *et al.*, 1992; Rodden, 1991). Unfortunately, that term is already used widely to describe a class of timing regimes in digital circuits (Clark, 1967; Seitz, 1980; Sutherland, 1989). In respect of this conflicting nomenclature, we have newly adopted a more appropriate term.
- 2 While it is possible for a potential buyer to employ an agent, in such a case the agent replaces the potential buyer as the bidder, from the viewpoint of the auctioneer.

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APPENDIX F (EVIDENCE APPENDIX)  
DEFINITION OF "INTENDED"

**THE NEW  
ROGET'S  
THESAURUS**

**OF THE ENGLISH LANGUAGE  
IN DICTIONARY FORM  
By NORMAN LEWIS  
LIBRARY EDITION**

**Revised, Updated 1978 Edition**

*Based on C. O. Sylvester Mawson's alphabetical arrangement of the famous Roget system of word classification*

**G. P. PUTNAM'S SONS, NEW YORK**

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**plain edition: SBN 399-12678-3  
index edition: SBN 399-12679-1**

**Library of Congress Cataloging in Publication Data**

**Lewis, Norman, 1912-      ed.**

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arrangement of the famous Roget system of word  
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**1. English language—Synonyms and antonyms.**

**I. Mawson, Christopher Orlando Sylvester, 1870-1938.  
Roget's Thesaurus of the English language in dictionary  
form. II. Title. III. Title: Roget's Thesaurus of  
the English language in dictionary form.**

**PE1591.L43 1977 423'.1 77-24457**

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**The Roget Dictionary**

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**by**

**C. O. Sylvester Mawson**

**Printed in the United States of America**

**Thirtieth Impression**

MEANNESS, PROTECTION, SUPPORT. *Antonyms*—See CRUELTY, INSENSITIVITY, SEVERITY.

**pivot**, *n.* axle, axis, gudgeon (ROTATION); hinge, turning point (CAUSATION).

**pixie**, *n.* fairy, fay, sprite (SUPERNATURAL BEINGS).

**placard**, *n.* advertisement, bill, flyer, poster, handbill (PUBLICATION, INFORMATION).

**placate**, *v.* reconcile, propitiate, conciliate, appease, mollify (PEACE, FRIENDLINESS, CALMNESS).

**place**, *n.* region, spot, point (PLACE, LOCATION); position, job (*colloq.*), post, office (SITUATION).

**place**, *v.* put, set, lay (PLACE); employ, engage, hire (SITUATION).

**PLACE**.—I. *Nouns.* place, spot, locality, situation, site, location, locus (*esp. tech.*), situs, position, region, neighborhood, locale, scene, tract; latitude, longitude, whereabouts; point, part; compartment, niche, nook, hole, corner.

II. *Verbs.* place, put, fix, set, stick, lay, deposit, rest, repose, settle, locate, dispose, stand, station, lodge, establish, plant, install; order, arrange, array, marshal, organize.

**appoint**, assign, name, nominate, commission, delegate, ordain, designate, constitute, depute, depute.

III. *Adverbs, phrases.* somewhere, in some place, here and there.

See also ARRANGEMENT, HABITATION, LOCATION, NEARNESS, REGION, SITUATION.

*Antonyms*—See ELIMINATION, REMOVAL.

**placement**, *n.* installation, fixation, emplacement (LOCATION); employment, engagement, hire, appointment (SITUATION).

**placid**, *adj.* peaceful, quiet, restful, tranquil, serene (PEACE, CALMNESS).

**plagiarism**, *n.* piracy, plagiarism, stealing (THIEVERY).

**plague**, *n.* epidemic, contagion, pestilence (DISEASE); bane, pest, blast, blight (DESTRUCTION); hydra, curse, cancer (WICKEDNESS).

**plague**, *v.* persecute, pursue, infest, molest (ANNOYANCE).

**plaid**, *n.* check, tartan, patchwork (VARIATION).

**plain**, *adj.* unornamented, unadorned, unornate, restrained (SIMPLICITY, SEVERITY); visible, clear, transparent (CLARITY, VISIBILITY); audible, distinct (LISTENING); unattractive, unaesthetic, homely (DEFORMITY); understandable, simple, unmistakable (UNDERSTANDING); modest, quiet, unassuming (MODESTY); undiluted, neat, unmixed (STRAIGHTNESS); dry, matter-of-fact, naked (SIMPLICITY).

**plain**, *n.* level, plateau, tableland (LAND). **plaintiff**, *n.* litigant, suitor, complainant (LAWSUIT, ACCUSATION).

**plaintive**, *adj.* lugubrious, moanful, lamentatory, wailful (SADNESS).

**plait**, *n.* braid, cue, wattle (WINDING); coil, pigtail, queue (HAIR).

**plait**, *v.* pleat, plat, braid, raddle, ravel, wattle (CROSSING, WINDING).

**PLAN**.—I. *Nouns.* plan, design, device, contrivance, aim, intention, intent, project, arrangement, prearrangement, conception, deal, proposal, proposition; strategy, strategics.

**outline**, blueprint, sketch, draft, rough draft, map, layout, diagram, chart; program, agenda, agenda (*pl.*), procedure, prospectus.

**plot**, scheme, intrigue, machination, schemery, maneuver; subterfuge, stratagem, gimmick (*slang*), trick, shift; racket; conspiracy, complot, countermine, counterplot.

**planner**, organizer, designer, author, architect, founder, strategist.

**plotter**, schemer, intriguer, intrigant, machinator, agitator, maneuverer; conspirator, complotter, counterplotter; adventurer, racketeer; cabal, junto, junta.

II. *Verbs.* plan, cogitate, contemplate, meditate; design, devise, frame, contrive, hatch, concoct, project; prearrange, premeditate, forecast; arrange, prepare, block out, map out, outline, sketch out, shape up; aim, intend, purpose, propose. **plan on**, aim for, bargain for, count on, reckon on.

**plot**, scheme, intrigue, maneuver, hatch a plot, machinate, agitate, brew, conspire, complot, cabal, colleague, countermine, counterplot.

See also ARRANGEMENT, MAP, METHOD, PREPARATION, PURPOSE. *Antonyms*—See NONPREPARATION, PURPOSELESSNESS.

**plane**, *adj.* even, level, flat, unwrinkled (SMOOTHNESS).

**plane**, *n.* aircraft, airplane, craft (FLYING); obverse, level, face, facet (SURFACE); level (*or* flat) surface, grade (FLATNESS).

**plane**, *v.* level, smooth, even (FLATNESS).

**planet**, *n.* earth, terrene, globe, sphere (WORLD).

**plank**, *n.* pole, stud, post, two-by-four, beam (WOOD).

**plant**, *n.* vegetable, shrub, bush (PLANT LIFE); shop, factory, mill, forge (WORK, PRODUCTION).

**plant**, *v.* sow, seed, grow, raise (FARMING); graft, ingraft, bud (INSERTION); set, deposit, station, lodge, establish, install (LOCATION, PLACE).

**plantation**, *n.* farm, farmstead, grange, ranch (FARMING).

THE  
AMERICAN  
HERITAGE  
COLLEGE  
*dic·tion·ar·y*



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will come to a bad end" (Max Beerbohm). *Knowing* implies the possession of knowledge, information, or understanding: *Knowing collectors bought all the paintings. Quick-witted suggests mental alertness and prompt response: quick-witted emergency medical staff. Smart* refers to quick intelligence and often a ready capability for taking care of one's own interests: *Smart lawyers can effectively manipulate juries. Intellectual* especially implies the capacity to grasp difficult or abstract concepts: *intellectual students*.

**in·tel·li·gent·si·a** (in-tel'ə-jənt'sē-ə, -gənt'-) *n.* The intellectual elite of a society. [Russ. *intelligentsiya* < Lat. *intelligentia*, intelligence < *intelligens*, *intelligent*, *intelligent*. See INTELLIGENT.]

**in·tel·li·gi·ble** (in-tel'j-i-bəl) *adj.* 1. Capable of being understood. 2. Capable of being apprehended by the intellect alone. [ME < OFr. < Lat. *intelligibilis*, *intelligibilis* < *intelligere*, to perceive. See INTELLIGENT.] — **in·tel'li·gi·bil'i·ty**, **in·tel'li·gi·ble·ness** *n.* — **in·tel'li·gi·bly** *adv.*

**in·tem·per·ance** (in-tēm'pər-əns, -prəns) *n.* 1. Lack of temperance, as in the indulgence of an appetite or a passion. 2. Excessive use of alcoholic beverages.

**in·tem·per·ate** (in-tēm'pər-it, -prīt) *adj.* Not temperate or moderate; excessive, esp. in the use of alcoholic beverages. — **in·tem'per·ate·ly** *adv.* — **in·tem'per·ate·ness** *n.*

**in·tend** (in-tēnd') *v.* **tend·ed**, **tend·ing**, **tends**. — *tr.* 1. To have in mind; plan: *We intend to go.* 2.a. To design for a specific purpose. *b.* To have in mind for a particular use. 3. To signify or mean. — *intr.* To have a design or purpose in mind. [ME *entenden* < OFr. *entendre* < Lat. *intendere* : *in-*, toward; see *in-* + *tendere*, to stretch; see *ten-*.]

**in·ten·dance** (in-tēn'dəns) *n.* 1. The function of an intendant; management. 2. An administrative office or district.

**in·ten·dan·cy** (in-tēn'dən-sē) *n.*, *pl.* **-cies**. 1. The position or function of an intendant. 2. Intendants considered as a group. 3. The district supervised by an intendant.

**in·ten·dant** (in-tēn'dənt) *n.* 1. An administrative official serving a French, Spanish, or Portuguese monarch. 2. A district administrator in some countries of Latin America. [Fr. < OFr., administrator < Lat. *intendens*, *intendant*, *pr.* part. of *intendere*, to intend. See INTEND.]

**in·tend·ed** (in-tēn'did) *adj.* 1. Deliberate; intentional. 2. Prospective; future. — *n.* **Informal.** One who is engaged to be married. — **in·tend'ed·ly** *adv.*

**in·tend·ing** (in-tēn'ding) *adj.* Purposing to become or be; prospective.

**in·tend·ment** (in-tēnd'mənt) *n.* The true meaning or intention of something, esp. of a law.

**in·ten·er·ate** (in-tēn'ə-rāt') *tr.v.* **-at·ed**, **-at·ing**, **-ates**. To make tender; soften. [IN- + Lat. *tener*, tender; see TENDER + -ATE.] — **in·ten·er·a·tion** *n.*

**in·tense** (in-tēns') *adj.* **tens·er**, **tens·est**. 1. Possessing or displaying a distinctive feature to an extreme degree. 2. Extreme in degree, strength, or size. 3. Involving or showing strain or extreme effort. 4.a. Deeply felt; profound. *b.* Tending to feel deeply. [ME < OFr. < Lat. *intensus*, stretched, intent < *p.* part. of *intendere*, to stretch, intend. See INTEND.] — **in·tense·ly** *adv.* — **in·tense·ness** *n.*

**Usage Note:** The meanings of *intense* and *intensive* are often subtly distinct. When used to describe human feeling or activity, *intense* often suggests a strength or concentration that arises from inner dispositions. *Intensive* is frequently applied when the strength or concentration of an activity is imposed from without. *Mark's intense study of German* suggests that Mark himself was responsible for the concentrated activity, whereas *Mark's intensive study of German* suggests that the program in which Mark was studying was designed to cover a great deal of material in a brief period.

**in·ten·si·fi·er** (in-tēn'sə-fi'ər) *n.* *Gram.* See *Intensive*.

**in·ten·si·fy** (in-tēn'sə-fi') *v.* **-fied**, **-fy·ing**, **-fies**. — *tr.* 1. To make intense or more intense. 2. To increase the contrast of (a photographic image). — *intr.* To become intense or more intense. — **in·ten'si·fi·ca·tion** (-fi-kā'shən) *n.*

**in·ten·sion** (in-tēn'shən) *n.* 1. The state or quality of being intense; intensity. 2. The act of becoming intense or more intense; intensification. 3. *Logic.* The sum of the attributes contained in a term. [Lat. *intensiō*, *intensiōn-* < *intensus*, stretched. See INTENSE.] — **in·ten'sion·al** *adj.*

**in·ten·si·ty** (in-tēn'si-tē) *n.*, *pl.* **-ties**. 1. Exceptionally great concentration, power, or force. 2. *Phys.* The amount or degree of strength of electricity, light, heat, or sound per unit area or volume. 3. *Color.* a. The strength of a color, esp. the degree to which it lacks its complementary color. *b.* See *saturation*.

**in·ten·sive** (in-tēn'siv) *adj.* 1. Of, relating to, or marked by intensity. See *Usage Note* at *Intense*. 2. *Gram.* Tending to emphasize or intensify. 3. Possessing or requiring to a high degree. Often used in combination: *research-intensive*. 4. Relating to or being a method esp. of land cultivation intended to increase the productivity of a fixed area by means of an increase in capital and labor. 5. *Phys.* Having the same value for any subdivision of a thermodynamic system: *intensive pressure*. — *n.* *Gram.* A linguistic element, such as the adverb

*extremely*, that provides force or emphasis. — **in·ten'sive·ly** *adv.* — **in·ten'sive·ness** *n.*

**intensive care** *n.* Continuous and closely monitored health care that is provided to critically ill patients.

**intensive care unit** *n.* A specialized section of a hospital containing the equipment and staff to provide intensive care.

**in·tent** (in-tēnt') *n.* 1. Something that is intended; an aim or a purpose. See *Syns* at *intention*. 2. *Law.* The state of one's mind at the time one carries out an action. 3. Meaning; purpose. — *adj.* 1. Firmly fixed; concentrated. 2. Having the attention applied; engrossed. 3. Having the mind and will on a specific purpose. — *idiom.* **for (or to) all intents and purposes.** In every practical sense; practically. [ME *entent* < OFr. < Med.Lat. *intentus* < Lat., an extending < *intensus*, attentive to < *p.* part. of *intendere*, to direct attention. See INTEND.] — **in·tent·ly** *adv.* — **in·tent·ness** *n.*

**in·ten·tion** (in-tēn'shən) *n.* 1. A course of action that one intends to follow. 2.a. An aim that guides action; an objective. *b.* Intentions. Purpose with respect to marriage. 3. *Philos.* A concept arising from directing the attention toward an object. 4. *Medic.* The process by which or the manner in which a wound heals. 5. *Archaic.* Import; meaning. [Ult. < Lat. *intentiō*, *intentiōn-* < *intensus*, intent < *p.* part. of *intendere*, to direct attention. See INTEND.]

**Syns:** *intention*, *intent*, *purpose*, *goal*, *end*, *aim*, *object*, *objective*. These nouns refer to what one plans to do or achieve. *Intention* simply signifies a course of action that one proposes to follow: *It is not my intention to argue with you.* *Intent* more strongly implies deliberateness: *our intent to plant a garden next year.* *Purpose* strengthens the idea of resolution or determination: *"His purpose was to discover how long these guests intended to stay"* (Joseph Conrad). *Goal* may suggest an idealistic or even a remote purpose: *set high goals for herself.* *End* suggests a long-range goal: *will use any means to achieve that end.* *Aim* stresses the direction one's efforts take in pursuit of an end: *The aim of most students is to study hard.* An *object* is an end that one tries to carry out: *The object of the game is to score points.* *Objective* often implies that the end or goal can be reached: *The report outlines the committee's objectives.*

**in·ten·tion·al** (in-tēn'shə-nəl) *adj.* 1. Done deliberately; intended: *an intentional slight.* See *Syns* at *voluntary*. 2. Having to do with intention. — **in·ten'tion·al'i·ty** (-nəl'i-tē) *n.* — **in·ten'tion·al·ly** *adv.*

**in·ter** (in-tūr') *tr.v.* **-tered**, **-ter·ing**, **-ters**. To place in a grave or tomb; bury. [Ult. < Med.Lat. *interrare* : Lat. *in-*, in; see *in-* + Lat. *terra*, earth; see *ters-*.]

**inter.** *abbr.* Intermediate.

**inter-** *pref.* 1. Between; among: *international*. 2. In the midst of; within: *intertropical*. 3. Mutual; mutually: *interrelate*. 4. Reciprocal; reciprocally: *intermingle*. [ME *entre*, *inter-* < OFr. *entre-* < Lat. *inter-* < *inter*. See *en-*.]

**in·ter·a·bang** (in-tēr'ə-bāng') *n.* Var. of *interrobang*.

**in·ter·act** (in'tər-äkt') *intr.v.* **-act·ed**, **-act·ing**, **-acts**. To act on each other: *Students learn by interacting.*

**in·ter·ac·tion** (in'tər-äk'shən) *n.* 1.a. The act or process of interacting. *b.* The state of undergoing interaction. 2. *Phys.* Any of four fundamental ways in which bodies can influence each other, classified as strong, weak, electromagnetic, and gravitational.

**in·ter·ac·tive** (in'tər-äk'tiv) *adj.* 1. Acting or capable of acting on each other. 2. *Comp. Sci.* Of or relating to a two-way electronic or communications system in which response is direct and continual. 3. Of, relating to, or being a form of television entertainment in which the viewer participates directly. — **in·ter·ac·tive·ly** *adv.*

**in·ter·a·li·a** (in'tər ə'lē-ə, ə'lē-ə) *adv.* Among other things. [Lat.]

**in·ter·a·li·os** (ə'lē-ös', ə'lē-ös') *adv.* Among other persons. [Lat. *inter alios*.]

**in·ter·a·tom·ic** (in'tər-ə-tōm'ik) *adj.* Occurring, operating, or situated between atoms.

**in·ter·breed** (in'tər-brēd') *v.* **-bred** (-brēd'), **-breed·ing**, **-breeds**. — *intr.* 1. To breed with another kind or species; hybridize. 2. To breed within a narrow range or with closely related types or individuals; inbreed. — *tr.* To cause to interbreed.

**in·ter·ca·lar·y** (in-tūr'kə-lər'ē, in'tər-kāl'ə-rē) *adj.* 1.a. Inserted in the calendar to make the calendar year correspond to the solar year. Used of a day or month. *b.* Having such a day or month inserted. Used of a year. 2. Inserted between other elements or parts; interpolated. [Lat. *intercalarius*, *intercalaris* < *intercalare*, to intercalate. See INTERCALATE.]

**in·ter·ca·late** (in-tūr'kə-lāt') *tr.v.* **-lat·ed**, **-lat·ing**, **-lates**. 1. To insert (a day or month) in a calendar. 2. To insert, interpose, or interpolate. [Lat. *intercalare*, *intercalat-* : *inter-*, inter- + *calare*, to proclaim; see *kela-*.] — **in·ter'ca·la·tion** *n.* — **in·ter'ca·la·tive** *adj.*

**in·ter·cede** (in'tər-sēd') *intr.v.* **-ced·ed**, **-ced·ing**, **-cedes**. 1. To plead on another's behalf. 2. To act as mediator in a dispute. [Lat. *intercedere*, to intervene : *inter-*, inter- + *cēdere*, to go; see *ked-*.] — **in·ter·ced'er** *n.*

ā pat	oi boy
ā pay	ou out
ār care	ōō took
ā father	ōō boot
ū pet	ū cut
ē be	ūr urge
ī pit	th thin
ī ple	th this
ir pler	hw which
ō pot	zh vision
ō toe	ə about
ō paw	item

**Stress marks:**  
' (primary);  
' (secondary), as in  
dictionary (dik'shə-nēr'ē)

APPENDIX G  
(RELATED PROCEEDINGS APPENDIX)

Attached please find copies of:

1) a Memorandum Order dated January 14, 2004  
(concerning a motion for Preliminary Injunction); and

2) a Opinion and Order dated September 9, 2004  
(concerning the *Markman* hearing for the above-identified  
litigation);

all issued by Judge K. Jordan in the U.S. District Court for  
the District of Delaware in the eSpeed litigation in *eSpeed,  
Inc. et al. v. BrokerTec USA, L.L.C. et al.*, D. Del., Civil  
Action No. 03-612(KAJ).



IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

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DISTRICT OF DELAWARE  
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eSPEED, INC.; CANTOR FITZGERALD,  
L.P.; and CFPH, L.L.C.,

Plaintiffs,

v.

BROKERTEC USA, L.L.C.; BROKERTEC  
GLOBAL, L.L.C.; GARBAN, LLC; ICAP  
PLC; OM AB; and OM TECHNOLOGY  
(U.S.), INC.,

Defendants.

Civil Action No. 03-612-KAJ

**MEMORANDUM ORDER**

I. INTRODUCTION

This is a patent infringement case. Jurisdiction is proper under 28 U.S.C. § 1338. Plaintiffs in this case are eSpeed, Inc., Cantor Fitzgerald, L.P., and CFPH, L.L.C. (collectively, "eSpeed"). Defendants are BrokerTec USA, L.L.C., BrokerTec Global, L.L.C., Garban, LLC, ICAP PLC, OM AB and OM Technology (U.S.), Inc. (collectively, "BrokerTec"). The patent-in-suit, U.S. Patent No. 6,560,580 B1 (issued May 6, 2003) (the "'580 patent'"), is entitled "Automated Auction Protocol Processor." (Docket Item ["D.I."] 1, Exh. A.) The named inventors of the '580 patent are Stuart A. Fraser, Howard Lutnick, and Bijoy Paul, with plaintiffs Cantor Fitzgerald, L.P. and CFPH L.L.C. as assignees. (*Id.*) Plaintiff eSpeed, Inc. is the exclusive licensee of the '580 patent. (*Id.*, ¶ 11.)

On June 30, 2003, eSpeed filed suit alleging that BrokerTec is wilfully and intentionally infringing the '580 patent. (*Id.*, ¶ 12.) On the same day, eSpeed also filed

a motion for a preliminary injunction to prevent BrokerTec from "making, using, offering for sale, selling, licensing, or otherwise distributing electronic trading systems which embody or comprise the inventions claimed in [the '580 patent]."<sup>1</sup> (D.I. 3.) On December 12, 2003, the United States, on behalf of the Department of the Treasury, filed a Statement of Interest in this proceeding pursuant to 28 U.S.C. § 517.<sup>2</sup> (D.I. 183.)

After reviewing the submissions of the parties and the government, and the applicable law, I am persuaded that the public interest strongly outweighs any private interest eSpeed may have in obtaining a preliminary injunction. eSpeed has failed to make a persuasive showing that irreparable harm will result if BrokerTec's conduct is not enjoined. Because eSpeed has not adequately shown that it is entitled to emergency relief, its motion for a preliminary injunction will be denied.

## II. BACKGROUND

Both eSpeed and BrokerTec operate electronic trading platforms that facilitate trading among wholesale purchasers and sellers of United States Treasury securities and other United States government securities. (D.I. 4 at 9; D.I. 106 at 7.) eSpeed alleges that BrokerTec's trading platform infringes the technology disclosed in the '580 patent, specifically, the "workup" protocol, which eSpeed describes as follows:

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<sup>1</sup>After fully briefing eSpeed's motion for a preliminary injunction, the parties appeared for a hearing on October 30, 2003, (D.I. 128), and submitted proposed findings of fact and conclusions of law on December 4, 2003 (D.I. 159, 160, 167, 168).

<sup>2</sup>"The Solicitor General, or any officer of the Department of Justice, may be sent by the Attorney General to any State or district in the United States to attend to the interests of the United States in a suit pending in a court of the United States, or in a court of a State, or to attend to any other interest of the United States." 28 U.S.C. § 517 (2003).

The eSpeed electronic trading platform automatically provides the participants who are first to make a bid or offer (or the first to act on a bid or offer) with priority and a time-based right of first refusal with respect to that transaction. Only after an initial trade is done or the defined time interval lapses may others participate in the trade at the defined price. This protocol...effectively rewards participants for market participation, providing liquidity and driving the market towards the best price by preventing others from exploiting the market that the initial traders have created before they have revealed and been given the opportunity to trade their full volume. After the initial traders have finished trading with one another, the protocol allows another trader to participate in the trade without being able to exclude others from also participating.

(D.I. 4 at 13; D.I. 6, ¶ 7.) Independent claim 22 and dependent claim 23 of the '580 patent address this workup trading protocol, in particular, "its division into two periods, a period when the initial traders control the trade to the exclusion of all other participants and a period that follows in which orders placed by other participants may be executed, without others controlling the trade."<sup>3</sup> (D.I. 4 at 25; D.I. 6, ¶ 12.)

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<sup>3</sup>Independent claim 22 reads as follows:

A method implemented on a distributed-workstation computer system for trading an item between participants, said method comprising:  
providing a bid/offer system state wherein a first participant enters a bid or offer for the item at a select price and volume;  
receiving from a second participant a trade command to hit or lift the bid or offer;  
entering a trading system state wherein a trade transaction is executed between the first and second participants for a volume of the item at a defined price, and wherein (a) the first and second participants are provided a period to control trading, during which they may transact with each other additional volume of the item at the defined price to the exclusion of other participants desiring to participate in the trade, and (b) upon conclusion of the period, a new trade transaction is automatically executed at the defined price in response to a trade command entered by another participant without providing the other participant a period to control the trade.

'580 patent, col. 20, lns. 33-53. Dependent claim 23 claims the method of claim 22, "wherein the trade command entered by the other participant is entered during the period to control trading but not executed until the conclusion of said period." *Id.*, lns. 54-57.

On May 21, 2001, BrokerTec's electronic trading platform began offering workup privileges to initial participants in a trade.<sup>4</sup> (D.I. 106 at 14.) BrokerTec states that the workup privileges it "grant[s] its customers...are of fixed temporal duration," and "[b]y intentional design, [its] customers cannot 'control' a trade, as that latter term is used in the '580 patent... ." (D.I. 106 at 16.) eSpeed claims that BrokerTec's trading platform implements the same workup protocol claimed in the '580 patent, and thus literally infringes claims 22 and 23. (D.I. 4 at 26.)

In support of its motion for a preliminary injunction, eSpeed asserts that it has a high likelihood of success on the merits of its infringement claim. (D.I. 4 at 20.) eSpeed further argues that, since the '580 patent is both valid and infringed, it is entitled to a presumption of irreparable harm. (*Id.* at 30.) Finally, eSpeed asserts that both the balance of the hardships and the public interest favor granting a preliminary injunction. (*Id.* at 34, 36.) BrokerTec disputes the validity of the '580 patent (D.I. 106 at 23, 26) and claims that eSpeed has not presented competent evidence of infringement (*id.* at 34). BrokerTec further argues that granting a preliminary injunction would adversely affect the public interest. (*Id.* at 38.) The government's position is that "the proposed injunction would effectively eliminate an electronic marketplace used by a significant percentage of traders in the secondary market for Treasury securities," resulting in "a significant, detrimental impact on the public interest." (D.I. 183 at 2.)

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<sup>4</sup>BrokerTec argues that eSpeed has "purposefully delayed" for over two years in seeking injunctive relief. (D.I. 106 at 12.) eSpeed, of course, denies this allegation. (D.I. 118 at 17, 18.) The parties will have the opportunity to resolve this issue at trial, as it does not impact my decision that a preliminary injunction is inappropriate given the critical public interest at stake.

### III. STANDARD OF REVIEW

A preliminary injunction is “a drastic and extraordinary remedy that is not to be routinely granted.” *Intel Corp. v. ULSI Sys. Tech., Inc.*, 995 F.2d 1566, 1568 (Fed. Cir. 1993). As the moving party, eSpeed is entitled to a preliminary injunction only if it succeeds in showing (1) a reasonable likelihood of success on the merits; (2) irreparable harm if an injunction is not granted; (3) a balance of hardships tipping in its favor; and (4) the injunction's favorable impact on the public interest. *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1350 (Fed. Cir. 2001) (citing *Reebok Int'l Ltd. v. J. Baker, Inc.*, 32 F.3d 1552, 1555 (Fed. Cir. 1994)).

When deciding whether a preliminary injunction should be granted or denied, the court should weigh and measure each of the four factors against the other factors and against the magnitude of the relief requested. *Hybritech Inc. v. Abbott Laboratories*, 849 F.2d 1446, 1451 n.12 (Fed. Cir. 1988). Under this rule, no one factor, taken individually, is necessarily dispositive. *Chrysler Motors Corp. v. Auto Body Panel, Inc.*, 908 F.2d 951, 953 (Fed. Cir. 1990). If a preliminary injunction is granted by the trial court, the weakness of the showing regarding one factor may be overborne by the strength of others. *Id.* If the injunction is denied, the absence of an adequate showing with regard to any one factor may be sufficient, given the weight or lack of it assigned the other factors, to justify the denial. *Id.* “As a basic proposition, [granting or denying a preliminary injunction] lies largely in the sound discretion of the trial judge.” *Id.* (citation omitted).

#### IV. DISCUSSION

##### A. Public Interest

In patent cases, “the focus of the district court’s public interest analysis should be whether there exists some critical public interest that would be injured by the grant of preliminary relief.” *Hybritech*, 849 F.2d at 1458. Because the government has taken the extraordinary step of filing a Statement of Interest in this case that exclusively discusses the impact of eSpeed’s requested preliminary injunction on the “critical market for Treasury securities,” (D.I. 183 at 4), I will first consider whether the proposed injunction adversely affects the public interest.

Apart from asserting that the public interest generally favors protecting a patentee’s rights, (D.I. 4 at 36 (citing *Smith Intern., Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1581 (Fed. Cir. 1983))), eSpeed argues that the purpose of its motion for a preliminary injunction is not to prevent BrokerTec from using “any version of a workup protocol,” but rather to “stop BrokerTec from using the protocol covered by the ‘580 patent” (D.I. 118 at 19). Thus, eSpeed suggests that BrokerTec and its customers may easily transition back to using an outdated, inferior, and less sophisticated trading platform without causing any disruptions in the secondary market. (D.I. 4 at 35; D.I. 128 at 58:7-10.) That suggestion is belied by the evidence and common sense. eSpeed acknowledges that “virtually all outright trading of Treasury benchmarks in the wholesale secondary market is occurring on one of two electronic marketplaces, eSpeed or BrokerTec.” (D.I. 4 at 17; D.I. 5, ¶ 12.) At oral argument, counsel for eSpeed estimated that, with respect to different trading instruments, thirty-five to sixty-five percent of the trading is conducted using BrokerTec’s trading platform. (D.I. 128 at

52:1-8.) Though the magnitude of reliance on BrokerTec's trading platform is highly significant by either estimate, eSpeed assiduously ignores the fact that granting injunctive relief would effectively remove BrokerTec from the secondary trading market. BrokerTec's customers, who are accustomed to its current trading platform, are not likely to revert back to an antiquated method of trading. Instead, they are more likely to turn their trading, after some delay, to the only other viable player in the secondary market, namely, eSpeed. Indeed, it is reasonable to believe that that is exactly the result eSpeed hopes to achieve. While eSpeed may ultimately be entitled to the hegemony it seeks with this injunction, the government has pointed out three particular reasons why a preliminary injunction that reaches that result will adversely impact the public interest.

First, shutting down the trading system used by a significant part of the market could reduce trading in Treasury securities indefinitely, making them less liquid and decreasing their attractiveness as an investment. (D.I. 183 at 4.) The ultimate result of reduced trading would be an increased cost to the government in borrowing money to finance the Nation's debt. (*Id.*) Second, an "injunction would increase systemic risk to the secondary market for Treasury securities by leaving only one commonly used electronic trading system, the one operated by [eSpeed]." (*Id.* at 5.) Without an alternative trading system, the secondary trading market would be devastated if eSpeed's system went awry. Finally, "an injunction would give the plaintiffs a monopoly over the primary trading system used by the wholesale secondary market for Treasury securities." (*Id.*) In the absence of competition, the transaction fees paid by dealers

who trade Treasury securities is likely to increase, with these costs being passed on to the Treasury Department when it issues securities. (*Id.*)

Not surprisingly, BrokerTec's position mirrors the one taken by the government. BrokerTec asserts that eSpeed's requested relief "would directly interfere with the [government's] ability to assure itself of a competitive and efficiently operating market for the trading of Treasury securities...." (D.I. 106 at 39.) eSpeed has not set forth any persuasive reason why its private interest in vindicating its patent rights is more important than the critical public interest in maintaining a fluid, competitive market for trading Treasury securities. Therefore, I see no reason to disrupt the secondary market before a full trial on the merits of eSpeed's patent infringement claims.

#### **B. Likelihood of Success on the Merits**

The likelihood of success on the merits is established when the moving party demonstrates that the patent-in-suit is both valid and infringed. *Reebok Intern. Ltd. v. J. Baker, Inc.*, 32 F.3d 1552, 1555 (Fed. Cir. 1994). Apart from asserting that its activities do not infringe the '580 patent, BrokerTec argues that the patent is invalid due to eSpeed's inequitable conduct before the U.S. Patent and Trademark Office.<sup>5</sup> (D.I. 106 at 27.) "In resisting a preliminary injunction...one need not make out a case of actual invalidity. Vulnerability is the issue at the preliminary injunction stage, while validity is the issue at trial. The showing of a substantial question as to invalidity thus requires

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<sup>5</sup>BrokerTec also asserts that the '580 patent is invalid because eSpeed impermissibly amended the disclosure of the invention to introduce new matter and because it is obvious in light of the prior art. (D.I. 106 at 23, 26.) eSpeed disputes these claims, (D.I. 118 at 5), and I express no opinion on them at this time.



less proof than the clear and convincing showing necessary to establish invalidity itself.”  
*Amazon.com*, 239 F.3d at 1359.

On February 21, 2002, the three named inventors of the '580 patent submitted declarations to the U.S. Patent and Trademark Office explaining why it had not previously occurred to them that a computer automated trading system, called the “Super System,” might be considered prior art. (D.I. 106 at 28, D.I. 118 at 12.) eSpeed’s predecessor, Cantor Fitzgerald, began using the Super System in 1993. (D.I. 106 at 28.) The inventors’ declarations explained that, even though the Super System was being used in Cantor Fitzgerald’s business, it was “an internal computer system.” (D.I. 118 at 12, 13.) BrokerTec argues that the Super System “was used to support commercial screen brokerage activities and fed trade information to screens on customers’ desks,” citing the deposition testimony of one of the inventors of the '580 patent, Stuart Fraser, as support. (D.I. 106 at 28.) eSpeed states that “[t]he fact that information generated by the Super System could be advertised on customers’ display screens...does not mean that the system was not an internal one... .” (D.I. 118 at 13.) BrokerTec’s position is that the inventors’ characterization of the Super System as an internal system was “highly misleading” and led to the Patent Examiner’s mistaken belief that the Super System did not constitute prior art. (D.I. 106 at 28.)

If proven, BrokerTec’s claim of inequitable conduct would invalidate the entire patent. See *Winbond Electronics Corp. v. Int’l Trade Comm’n*, 262 F.3d 1363, 1372 (Fed. Cir. 2001) (noting that patent obtained through inequitable conduct may not be enforced). Without expressing an opinion on the invalidity claim, I find that BrokerTec has presented enough facts to raise a substantial question as to the validity of the '580

patent, and I conclude that the question of inequitable conduct, while not resolved, is fairly before the court. *Arthrex Inc. v. dj Orthopedics LLC*, 2002 U.S. Dist. LEXIS 7634 at \*10 (D. Del. Apr. 30, 2002). Therefore, I find that eSpeed has not demonstrated a likelihood of success on the merits to a degree that would outweigh the critical public interest in the denial of an injunction. However, even if eSpeed were to make a persuasive showing of likelihood of success, eSpeed's request for injunctive relief would still be denied, given the overwhelming public interest against entering an injunction in this case. See *Cordis Corp. v. Boston Scientific Corp.*, 2003 U.S. Dist. LEXIS 21338 at \*10 n.6 (D. Del. Nov. 21, 2003) (even if movant demonstrated likelihood of success on the merits, in the absence of proof of irreparable harm, the public interest in maintaining competitive medical device market weighed against granting preliminary injunctive relief).

### **C. Irreparable Harm**

As discussed, BrokerTec has raised a substantial question as to the validity of the '580 patent; thus, eSpeed is not entitled to a presumption of irreparable harm. See *Amazon.com*, 239 F.3d at 1350 (presumption of irreparable harm arises where patentee proves both infringement and validity). eSpeed's only proof of irreparable harm is that, because BrokerTec is a "competitive infringer," eSpeed is likely to lose market share and goodwill, "eroding their hard-won image as a market leader in electronic marketplace technology." (D.I. 4 at 33.) However, "[t]hese threatened injuries, which money alone could not cure," (*id.*), together with any perceived "unfair hardship" eSpeed feels it may suffer if BrokerTec is not enjoined, (*id.* at 35), are not enough to overcome the strong public interest in having both eSpeed's and BrokerTec's trading platform

remain fully functional pending a full trial.<sup>6</sup> See *Nutrition 21 v. United States*, 930 F.2d 867, 871 (Fed. Cir. 1991) (“[N]either the difficulty of calculating losses in market share, nor speculation that such losses might occur, amount to proof of special circumstances justifying the extraordinary relief of an injunction prior to trial.”)

V. CONCLUSION

For these reasons, it is hereby ORDERED that eSpeed's Motion for a Preliminary Injunction is DENIED.



UNITED STATES DISTRICT JUDGE

Wilmington, Delaware  
January 14, 2004

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<sup>6</sup>I also note that, at oral argument, eSpeed's counsel was unable to suggest a reasonable amount of money to require as a bond in the event its injunction was granted. (D.I. 128 at 45-49.)

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

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DISTRICT OF DELAWARE  
2004 SEP -9 PM 4:01

eSPEED, INC.; CANTOR FITZGERALD,  
L.P.; CFPB, L.L.C., and eSPEED  
GOVERNMENT SECURITIES, INC.,

Plaintiffs,

v.

BROKERTEC USA, L.L.C.; BROKERTEC  
GLOBAL, L.L.C.; GARBAN, LLC; ICAP  
PLC; OM AB; and OM TECHNOLOGY  
(U.S.), INC.,

Defendants.

Civil Action No. 03-612-KAJ

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OPINION

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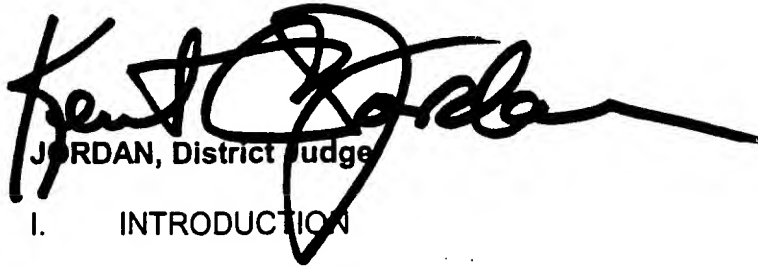
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Wilmington, Delaware  
September 9, 2004

  
JORDAN, District Judge

I. INTRODUCTION

This is a patent infringement case. Presently before me are the parties' requests for construction of the disputed claim language of U.S. Patent No. 6,560,580 B1 (issued May 6, 2003) ("the '580 patent") pursuant to *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996).<sup>1</sup> The plaintiffs are eSpeed, Inc., Cantor Fitzgerald, L.P., CFPB, L.L.C., and eSpeed Government Securities, Inc. (collectively, "eSpeed" or "plaintiffs").<sup>2</sup> The defendants are Brokertec USA, L.L.C., Garban, L.L.C., ICAP Plc, OM Technology AB, and OM Technology (US), Inc. (collectively, "BrokerTec" or "defendants").<sup>3</sup> The parties have fully briefed their positions and appeared before me for oral argument on August 27, 2004. (See Docket Item ["D.I."] 514.) Jurisdiction is proper under 28 U.S.C. § 1338.

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<sup>1</sup>The named inventors of the '580 patent, entitled "Automated auction protocol processor", are Stuart A. Fraser, Howard Lutnick, and Bijoy Paul, with plaintiffs Cantor Fitzgerald, L.P. and CFPB L.L.C. as assignees. (See '580 patent (attached to Docket Item ["D.I."] 463 (Joint Claim Construction Chart) as Ex. A.) Plaintiff eSpeed, Inc. is the exclusive licensee of the '580 patent. (D.I. 1, ¶ 11.)

<sup>2</sup>The plaintiffs' motion to amend their complaint to add eSpeed Government Securities, Inc. as a plaintiff was granted on August 30, 2004 (D.I. 511) and the plaintiffs filed their First Amended Complaint on August 31, 2004 (D.I. 512).

<sup>3</sup>Defendant ICAP Plc has challenged the exercise of personal jurisdiction over it in this court. (D.I. 161.) That motion is under advisement.

## II. BACKGROUND

### A. Procedural Background

eSpeed filed a complaint for patent infringement against BrokerTec on June 30, 2003, alleging that BrokerTec is willfully and intentionally infringing the '580 patent. (D.I. 1, ¶ 12.) On the same day, eSpeed also filed a motion for a preliminary injunction to enjoin BrokerTec from "making, using, offering for sale, selling, licensing, or otherwise distributing electronic trading systems which embody or comprise the inventions claimed in [the '580 patent]." (D.I. 3.) eSpeed's motion for a preliminary injunction was denied on January 14, 2004. (D.I. 200 (reported at *eSpeed, Inc. v. BrokerTec USA, L.L.C.*, 2004 U.S. Dist. LEXIS 385, 69 U.S.P.Q.2d 1466 (D. Del. Jan. 14, 2004) ("*eSpeed I*").) On February 24, 2004, BrokerTec filed a motion to sever the plaintiffs' claim against defendant Garban, L.L.C. (D.I. 248, 249), which was denied on June 15, 2004 (D.I. 424 (reported at *eSpeed, Inc. v. BrokerTec USA, L.L.C.*, 2004 U.S. Dist. LEXIS 13486 (D. Del. June 15, 2004) ("*eSpeed II*").). The parties are scheduled to try this case to a jury beginning on February 7, 2005.

### B. The Disclosed Technology

The '580 patent discloses "[a] data processing system for implementing transaction management of auction-based trading for specialized items such as fixed income instruments" which provides "a highly structured trading protocol" ('580 patent, Abstract (attached to D.I. 463 as Ex. A)) that the parties commonly refer to as an electronic trading platform, see *eSpeed I*, 2004 U.S. Dist. LEXIS 385 at \*3. The plaintiffs argue that the defendants operate two electronic trading platforms that infringe

the '580 patent, namely, the BrokerTec ETN and the Garban ETC/GTN.<sup>4</sup> (D.I. 464 at 2.) Specifically, the plaintiffs say that the defendants' electronic trading platforms infringe the "workup protocol" claimed by each of the independent asserted claims of the '580 patent, that is, claims 20, 22, 24, and 29.<sup>5</sup> (*Id.* at 3-5.) Claim 20, which is set forth below with the disputed claim terms in italics, exemplifies this claimed workup protocol:

A method implemented on a distributed workstation computer system for trading an item between passive participants and an aggressor participant, the method comprising:

providing a *bid/offer system state* wherein the passive participants participate by entering bids or offers at select prices and volumes for the item;

distributing the bids or offers to the workstations;

receiving a hit or lift from the aggressor participant in response to one or more of the bids or offers to trade a desired volume of the item at a desired price; and

transitioning to a trading *system state* wherein:

(a) a trade transaction is executed, at a defined price set by the hit or lift, between the aggressor participant and each passive

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<sup>4</sup>For a more thorough description of the technology disclosed by the '580 patent and additional background information pertaining to this case, see *eSpeed I*, 2004 U.S. Dist. LEXIS 385 at \*3-\*5; see also *eSpeed II*, 2004 U.S. Dist. LEXIS 13486 at \*2-\*7.

<sup>5</sup>Though claims 20, 22, and 24 are method claims, and claim 29 is an apparatus claim, the plaintiffs say, and the defendants do not dispute, that the claim construction issues are substantively the same for each claim. (D.I. 464 at 2.) *eSpeed* is asserting claims 20-25 and 29-30 against BrokerTec. In those asserted claims, claim 21 depends from claim 20; claim 23 depends from claim 22; claim 25 depends from claim 24; and claim 30 depends from claim 29. All of the disputed claim terms construed herein appear only in the asserted independent claims. It follows that each asserted dependent claim contains the same limitation as the independent claim from which it depends.

participant whose bid or offer had been hit or lifted by the aggressor participant;

(b) a period of exclusivity is provided during which the aggressor participant and a designated passive participant may *control trading* by transacting additional volume of the item with each other at the defined price to the exclusion of other participants desiring to participate in trading; and

(c) upon termination of the period of exclusivity, new trade transactions involving the other participants are tested for and executed at the defined price without providing the other participants a period of exclusivity to *control trading*.

('580 patent, col. 20, ll. 4-29.)

According to the plaintiffs, the "automated workup protocol" disclosed by the '580 patent is inventive because it departs from "the traditional sequential workup practice" used in voice broking, or open outcry, environments. (D.I. 464 at 6-7.) This departure from the earlier workup practice is inventive, the plaintiffs say, because "only the initial aggressor and the earliest passive participant enjoy a workup rather than all 'Workup State' participants," (*id.* at 6) which "increases the speed and volume of trading by requiring participants other than the initial pair to commit to their full intended size" (*id.* at 6-7). The defendants, of course, dispute this position, and say that the workup protocol of the '580 patent "is nothing more than an automation of pre-existing trading protocols and rules...." (D.I. 41, ¶ 6.)

### III. STANDARD OF REVIEW

A determination of patent infringement involves two steps. First, the patent claims are construed, and, second, the claims are compared to the allegedly infringing device. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1455 (Fed. Cir. 1998) (*en banc*). Claim construction is a matter of law for the court. *Markman*, 52 F.3d at 979.



"To properly construe the claims, a court must examine the claims, the rest of the specification, and, if in evidence, the prosecution history." *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1324 (Fed. Cir. 2003). The process begins, however, with the language used in each claim itself. See, e.g., *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). It is that language that defines and measures the scope of a patented invention. See, e.g., *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc).

If possible, claim language is given the ordinary and accustomed meaning understood by practitioners in the art. *Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc.*, 222 F.3d 951, 955 (Fed. Cir. 2000). There is a "heavy presumption" that, if such a meaning exists, it is the meaning intended. *Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc.*, 262 F.3d 1258, 1268 (Fed. Cir. 2001). That presumption does not control, however, when the inventor deviates from the ordinary and accustomed meaning by acting as a lexicographer or when the ordinary and accustomed meaning would deprive the claim, as a whole, of an ascertainable meaning. *Id.* The intrinsic record before the court, therefore, "must be examined in every case to determine whether the presumption of ordinary and customary meaning is rebutted." *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1204 (Fed. Cir. 2002). If there is no clear, ordinary and customary meaning in the claim language, then consideration of the rest of the intrinsic evidence is directed to resolving, if possible, the lack of clarity. *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001).

If the meaning of a claim term remains unclear after considering the intrinsic evidence, a court may enlist the aid of extrinsic evidence “to help resolve the lack of clarity.” *Id.* at 1332; *see also Mannington Mills, Inc. v. Armstrong World Indus., Inc.*, 218 F. Supp. 2d 594, 598 (D. Del. 2002) (“When the extrinsic record can provide a meaning eluding the court’s grasp, a court should adopt such a construction if that construction is cognizant with the overall intrinsic record before it.”) (citing *Vitronics*, 90 F.3d at 1583). Use of extrinsic evidence, however, is restricted. “Relying on extrinsic evidence to construe a claim is ‘proper only when the claim language remains genuinely ambiguous after consideration of the intrinsic evidence.’” *Interactive Gift*, 256 F.3d at 1332. Extrinsic evidence may not “contradict the import of other parts of the specification [or intrinsic record]. Indeed, where the patent documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no weight.” *Id.* Neither are inventors entitled to an after-the-fact claim construction inapposite to the “clear import of the patent disclosure itself.” *North Am. Vaccine, Inc. v. Am. Cyanamid Co.*, 7 F.3d 1571, 1577 (Fed. Cir. 1993), *cert. denied*, 511 U.S. 1069 (1994).

#### IV. DISCUSSION

The plaintiffs allege that the defendants’ accused trading platforms infringe claims 20-25 and 29-30 of the ‘580 patent. (D.I. 464 at 2.) In those claims, the parties dispute the meaning of the following claim terms: (1) “state” or “system state”; (2)

“bid/offer system state” or “system bid/offer state”; and (3) “control trading” or “control subsequent trading”.<sup>6</sup> (D.I. 463.)

There are two issues to be addressed before turning to a discussion of the disputed claim terms themselves. First, each of the defendants’ proposed claim constructions end with the phrase “...substantially as described in the ‘580 patent”, (see D.I. 463 at 3-6), which the plaintiffs have dubbed an “omnibus clause” (D.I. 503 at 1). The plaintiffs argue that including this clause in the construction of the disputed claim terms would render them “so open-ended as to virtually invite the jury to import further limitations into the claims, and thereby nullify the Court’s construction.” (D.I. 464 at 14.) The defendants have not cited, nor am I aware of, any pertinent legal authority that supports including such a clause in the construction of the disputed claim terms (see D.I. 514 at 27:10-28:10), and I decline to adopt that proposed language in this case.

Second, despite taking the position at the inception of this case that “[t]he subject matter [of the ‘580 patent] has to do with the rules of trading government bonds...” (D.I. 464 at 15), the defendants now assert, for the first time, approximately a year after the case was filed, that the ‘580 patent claims a “finite state machine”, which, apparently, is something known in the field of computer data processing (D.I. 482 at 6-

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<sup>6</sup>At the time the parties filed their Joint Claim Construction Chart and the accompanying briefing, the claim term “trading system state” or “system trading state” was also in dispute. (See D.I. 463, D.I. 464 at 25, D.I. 482 at 12.) The defendants argue that “state” and “trading system state” have essentially the same meaning, as those terms are used in the ‘580 patent. (D.I. 482 at 12-13.) When asked about the defendants’ position during the hearing on claim construction, counsel for the plaintiffs stated that “at this point, I don’t think trading state, separate from state, bid/offer state, and control trading has any impact on any of the issues in the case.” (D.I. 514 at 30:10-14.) Based on this representation, it appears that the claim term “trading system state” or “system trading state” is no longer in dispute, and I will not construe it herein.

7). This change in position is surprising, given that the parties were proceeding up until this point with the understanding, I thought, that the '580 patent was a business method patent. When asked at the claim construction hearing what, exactly, the '580 patent was if it was not a business method patent, counsel for the defendants stated that "it is a patent on a computer system that embodies logic for processing bid/offer, hit, lift and other trading commands in a specified way as claimed in the patent." (D.I. 514 at 56:10-14.) However, the defendants' counsel stopped short of saying that the '580 patent was a patent on software or hardware.<sup>7</sup> (*Id.* at 54:22-55:18.) I am unpersuaded by the defendants' sudden shift in defining the field of the invention of the '580 patent, and thus, the scope of the pertinent art. The parties have treated the '580 patent as a business method patent since the inception of this case. No persuasive reason was advanced for treating it otherwise now.

A. "state" or "system state"

1. The Parties' Proposed Constructions

The plaintiffs say that "state" or "system state" should be construed as "an automated trading procedure that defines the options available to participants and the rules of trading." (D.I. 463 at 3; D.I. 464 at 10.) The defendants' proposed construction is "a condition of a finite state machine embodied in a computer system and used to control an aspect of the system's operation, substantially as described in the '580 patent." (D.I. 463 at 3; D.I. 482 at 6.)

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<sup>7</sup>The plaintiffs do not deny that the '580 patent claims "an automated system implemented on a computer" (D.I. 514 at 58:8-10; 82:5-7) and "a list of instructions to carry out a process" (*id.* at 61:13-14).

## 2. The Court's Construction

As discussed, the '580 patent is a business method patent, and not, as the defendants would have it, "a patent on an automated auction protocol processor that implements what could be characterized as a business method." (D.I. 514 at 54:18-21) or "a patent on a computer system that embodies logic..." (*id.* at 10-12). The defendants' proposed claim construction for "state" or "system state" therefore fails, because it is predicated upon the erroneous conclusion that the invention claimed in the '580 patent is a finite state machine.<sup>8</sup>

The plaintiffs' proposed claim construction of "state" or "system state" is supported by the intrinsic evidence, specifically, the language of unasserted claim 26, which recites "a plurality of states which define the ability of participants to participate in trading...." ('580 patent, col. 21, ll. 24-26.) There is also language in the specification which says that "[t]he workstation "state" determines the options available to [a] trader," (*id.*, col. 5, ll. 15-32) and that "[a]s each state is entered, the protocols are shifted and new rules to trading apply" (*id.*, col. 8, ll. 55-61). Thus, because the intrinsic evidence clearly supports the plaintiffs' proposed construction of the claim term "state" or "system state", I will construe "state" or "system state" to mean "an automated trading procedure that defines the options available to participants and the rules of trading".

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<sup>8</sup>Furthermore, during prosecution of the '580 patent, the plaintiffs emphasized to the Examiner that a state change referred to changing protocols of trading, and not to the operation of a computer or a computer program. Rather, they said that "[c]hange of state refers to the different protocols governing trading securities during different conditions...." (D.I. 463, Ex. E at FN1866-67.)

B. "bid/offer system state" or "system bid/offer state"

1. The Parties' Proposed Constructions

The plaintiffs' proposed construction of the term "bid/offer system state" or "system bid/offer state" is "a state during which participants may enter into the system bids and offers for an item at select prices and volumes." (D.I. 463 at 4; D.I. 464 at 17.)

The defendants' proposed construction is "a 'state' (as defined above) in which a computer system allows entry of bid, offer, hit, or lift commands and allows select actions by participants with active offerings that other participants are denied, substantially as described in the '580 patent." (D.I. 463 at 4; D.I. 482 at 9.)

The plaintiffs say that "bid/offer system state" or "system bid/offer state" is clearly and broadly defined in the claims themselves, and, therefore, that definition should control. (D.I. 464 at 18 and n.9 (citing, *inter alia*, *Prima Tek II, L.L.C. v. Polypap, S.A.R.L.*, 318 F.3d 1143, 1150-51 (Fed. Cir. 2003).) In support of that argument, they point to claim 20, which recites "providing a bid/offer system state wherein the passive participants participate by entering bids or offers at select prices and volumes for the item...." ('580 patent, col. 20, ll. 8-10.) They also point to claims 22 and 24, which both recite "providing a bid/offer system state wherein a first participant enters a bid or offer for the item at a select price and volume...." (*Id.*, col. 20, ll. 37-39, 61-63.) Similarly, claim 29 (the apparatus claim) recites a trading system that "provides a system bid/offer state enabling the passive participants to participate by entering bids or offers with respect to the item...." (*Id.*, col 22, ll. 16-18.)

In response, the defendants argue that the "wherein" clauses relied upon by the plaintiffs do not provide a complete definition for "bid/offer system state" or "system bid

offer state” because they differ from claim to claim. (D.I. 492 at 12.) The defendants cite unasserted claim 14 in support of this argument, which reads “providing a bid/offer system state wherein passive participants enter[] bids or offers for the item at associated select prices and volumes....” (’580 patent, col. 19, ll. 41-43.)

## 2. The Court’s Construction

I agree with the plaintiffs’ position that “bid/offer system state” or “system bid/offer state” is clearly and broadly defined in the claims of the ’580 patent, and that that definition controls. See *Prima Tek II*, 318 F.3d at 1150-52 (noting that “the scope of the asserted claims may be ascertained from the plain language of the claims” and that “broad claims supported by the written description should not be limited in their interpretation to a preferred embodiment”). The defendants’ argument that “wherein” clauses cited by the plaintiffs differ from claim to claim is a futile one, as the wherein clause of claim 14 is nearly identical to the wherein clauses of claims 20, 22, 24, and 29. Nor have the defendants directed my attention to anything in the patent or the intrinsic record that contradicts the definition of “bid/offer system state” or “system bid/offer state” set forth in the claims.<sup>9</sup> Accordingly, I will construe “bid/offer system

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<sup>9</sup>The defendants’ proposed claim language would limit “bid/offer system state” or “system bid/offer state” to a state that “allows select actions to participants with active offerings that other participants are denied”. (D.I. 463 at 4.) In support of this limitation, the defendants rely almost entirely on a description of the preferred embodiment of the invention (see *id.* (citing ’580 patent, col. 8, l. 66 to col. 11, l. 50)) that is set forth in the specification of the ’580 patent, in conjunction with a discussion of “clearing time” and the “when state” (see ’580 patent, col. 9, l. 66 to col. 12, l. 38). Where, as here, the disputed claim terms are clearly defined in the language of the claims themselves, the defendants cannot overcome the presumption that those definitions apply “simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history.” *Teleflex, Inc. v. Ficosa North Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002) (citation omitted). I therefore decline to read the

state” and “system bid/offer state” as “a state during which participants may enter into the system bids and offers for an item at select prices and volumes.”

C. “control trading” or “control subsequent trading”

1. The Parties’ Proposed Constructions

The plaintiffs say that “control trading” or “control subsequent trading” means “to have the option to trade additional volume of an item to the exclusion of other participants desiring to participate in the trade.” (D.I. 463 at 6; D.I. 464 at 26.) The defendants’ proposed construction is that to “control trading” means “to exercise authority to hold up a trade for as long as a participant continues to respond to its contra-party’s size offerings, substantially as described in the ‘580 patent.” (D.I. 463 at 6; D.I. 482 at 14.)

Claim 20 provides an example of the use of the term “control trading” in the patent, as it recites that “[a] period of exclusivity is provided during which the aggressor participant and a designated passive participant may *control trading* by transacting additional volume of the item with each other at the defined price to the exclusion of other participants desiring to participate in trading.” (‘580 patent, col. 20, ll. 19-24 (emphasis added).) Further, both the plaintiffs and the defendants cite the following language from the specification in support of their respective claim constructions (see D.I. 463 at 6; D.I. 464 at 27-28; D.I. 482 at 14-15):

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defendants’ proposed limitation into the claim language.



The initial participants in the Workup State (i.e., the Aggressor<sup>10</sup> and the first customer on the passive side) are known as “current workers” and are vested with the authority under system control to hold up a trade for a predetermined duration of time.

(‘580 patent, col. 8, ll. 46-51.)

Current workers control the trade and can submit additional transaction volume to their contra-traders; this to the exclusion of outside customers.

(*Id.*, col. 12, ll. 48-50.)

The defendants argue that the claim language of claim 20 supports their proposed construction of “control trading” because it “expressly notes that traders ‘control’ trading by transacting additional volume” and that “[t]he adverb ‘by’ indicates that the mechanism by which traders exercise control is by continuing to trade.” (D.I. 482 at 15 (emphasis in original).) In response, the plaintiffs say that “even if ‘transacting additional volume’ is the ‘mechanism’ by which participants control trading” it does mean that a participant may control trading indefinitely by continuing to transact additional volume. (D.I. 490 at 10.) The plaintiffs also say that claim 20 clearly states that the ability to control trading only exists for a period that is “‘provided’ whether or not the participants exercise the option to transact additional volume.” (*Id.*) Finally, the plaintiffs say that there is “no suggestion” in the language of claim 20 “that transacting additional volume could mean that the ‘period’ never ends.” (*Id.* at 11.)

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<sup>10</sup>An Aggressor is defined in the ‘580 patent as “a customer who initializes a trade”. A “trade” is defined as “a string of transactions at one price initiated by a hit or lift and continuing until timed out or done”. A “hit” is “accepting a pending bid (the dollar amount offered to buy a security - issue)” and a “lift” is “accepting a pending offer (the dollar amount offered to sell a security - issue)”. (See ‘580 patent, col. 6, ll. 30-45.)

The defendants also say that the plaintiffs' proposed claim construction is too broad, as it "conflates 'control' with any period of exclusivity," and is inconsistent with the intrinsic record of the '580 patent. (D.I. 492 at 24.) They rely on the following language from claim 29, reciting

...a system trading state which (a) executes a trade transaction in accordance with the hit or lift at a defined price set by the hit or lift, (b) provides a period of exclusivity enabling the aggressor participant and a designated passive participant to control subsequent trading by executing transactions between the aggressor and designated passive participant of additional volume of the item at the defined price to the exclusion of other participants desiring to participate in the trading...

('580 patent, col. 22, ll. 21-28.) The defendants also cite this language from the specification in support of their proposed claim construction:

The status of current worker dissipates upon entry of "done", or the lapsing of the trading inactivity interval. Again, this interval is a pre-set system parameter triggered via system logic. Absent such termination, current workers can trade almost indefinitely, as long as they continue to respond to their contra-party's size offerings.

(*Id.*, col. 12, ll. 58-62.) Finally, the defendants cite the prosecution history of the '580 patent, namely, declarations submitted by two of the inventors (Mr. Paul and Mr. Fraser) during prosecution wherein the defendants claim they used "the term 'control' as a synonym for the right to continue trading until 'done'...." (D.I. 482 at 15.) This, say the defendants, "demonstrates that the concept of 'controlling' trading encompasses more than a limited option to trade additional volume (such as for a pre-set time interval), as plaintiffs' definition implies." (*Id.* at 15-16.) The plaintiffs say that the defendants have "distorted the content of these declarations" and that Mr. Paul's

declaration emphasizes that control over a trade is temporally limited to a certain period.<sup>11</sup> (*Id.* (citing D.I. 459 at Tab 50, ¶ 11).)

## 2. The Court's Construction

Simply stated, the parties' dispute over the construction of "control trading" hinges on whether the term is construed as a period in which participants trade to the exclusion of others for as long as they continue to respond to each other's offers and counteroffers, or if it is construed as trading to the exclusion of others for a predetermined period of time. At the claim construction hearing, counsel for the defendants said that "[t]he ['580] patent doesn't say that the rule is you only get three seconds, and then whether you've done your full volume or not, or whether you're finished or not, you're out. That was an idea that BrokerTec came up with, not these plaintiffs." (D.I. 514 at 92:12-17.) When I restated the defendants' position that the plaintiffs' "invention is limited to a system that allows the first seller and first buyer to keep trading without a time limitation, except some non-trading intervention time that might kick in. But as long as one person - that one person is selling one share, they could theoretically keep going for as long as they want," (*id.* at 94:11-19), plaintiffs' counsel said only that "[i]t must be preferred embodiment" (*id.* at 95:3-4). In support of that assertion, the plaintiffs directed my attention to language from the specification

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<sup>11</sup>The plaintiffs also say that the defendants' construction of "control trading" contradicts the use of the term "control" in the defendants' "own internal development documents and sales literature." (D.I. 464 at 30.) However, extrinsic evidence is relevant only when the intrinsic record leaves some ambiguity as to a term's scope. *Vitronics*, 90 F.3d at 1584. The intrinsic record here does not leave any ambiguity as to the scope of the term "control trading", and therefore I need not consider this extrinsic evidence. See *id.*; see also *Interactive Gift*, 256 F.3d at 1332.

stating that “current workers...are vested with the authority under system control to hold up a trade for a predetermined duration of time.” (*Id.* at 95:20-96:10.)

However, that portion of the specification, together with the other intrinsic evidence cited by the plaintiffs, is not enough to overcome the plain language of the claims themselves. I agree with the defendants’ argument that the claim term “control trading”, as it is used in the claims, indicates that the manner in which the aggressor and the passive participant trade to the exclusion of other participants, is “by transacting additional volume of the item with each other”. (See ‘580 patent, col. 20, ll. 19-24, 46-49; col. 22, ll. 19-27.) The plaintiffs say that the defendants’ proposed claim construction means that the period of exclusivity never ends. (D.I. 490 at 11.) This, I think, overstates the defendants’ position. The defendants do not dispute that the period of exclusivity (as in, an interval of time) eventually ends. Their position is that the period of exclusivity ends when a participant no longer responds to its contra-party’s size offerings (D.I. 482 at 14-16) and not, as the plaintiffs would have it, that the period of exclusivity times out regardless of the trading activity of the participants.

The plaintiffs have not pointed out any intrinsic evidence that contradicts the defendants’ proposed construction of “control trading”. For that reason, and because the defendants’ proposed construction is supported by the claim language and the specification of the ‘580 patent, I will construe “control trading” or “control subsequent trading” to mean “to exercise authority to hold up a trade for as long as a participant continues to respond to its contra-party’s size offerings.”

## V. CONCLUSION

For these reasons, the disputed claim terms will be construed as follows:

<b>Claim Term</b>	<b>The Court's Construction</b>
"state" or "system state"	The court construes "state" or "system state" to mean "an automated trading procedure that defines the options available to participants and the rules of trading."
"bid/offer system state" or "system bid/offer state"	The court construes "bid/offer system state" or "system bid/offer state" to mean "a state during which participants may enter into the system bids and offers for an item at select prices and volumes."
"control trading" or "control subsequent trading"	The court construes "control trading" or "control subsequent trading" to mean "to exercise authority to hold up a trade for as long as a participant continues to respond to its contra-party's size offerings."

An appropriate order will issue.

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

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eSPEED, INC.; CANTOR FITZGERALD,  
L.P.; CFPH, L.L.C., and eSPEED  
GOVERNMENT SECURITIES, INC.,

Plaintiffs,

v.

BROKERTEC USA, L.L.C.; BROKERTEC  
GLOBAL, L.L.C.; GARBAN, LLC; ICAP  
PLC; OM AB; and OM TECHNOLOGY  
(U.S.), INC.,

Defendants.

Civil Action No. 03-612-KAJ

**ORDER**

For the reasons set forth in the Memorandum Opinion issued today, it is hereby  
ORDERED that the following disputed claim terms of U.S. Patent No. 6,560,580 B1  
(issued May 6, 2003) are construed as follows:

### **Claim Term**

"state" or "system state"

"bid/offer system state" or "system bid/offer state"

"control trading" or "control subsequent trading"

### **The Court's Construction**

The court construes "state" or "system state" to mean "an automated trading procedure that defines the options available to participants and the rules of trading."

The court construes "bid/offer system state" or "system bid/offer state" to mean "a state during which participants may enter into the system bids and offers for an item at select prices and volumes."

The court construes "control trading" or "control subsequent trading" to mean "to exercise authority to hold up a trade for as long as a participant continues to respond to its contra-party's size offerings."



UNITED STATES DISTRICT JUDGE

September 9, 2004  
Wilmington, Delaware

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